SEQUENCE LISTING

<pre>%110> University of Utah Research Foundation</pre>													
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ngg aca the gto acq got gat gad too gga aat gga atg gag att oft Top The Phe Mal The Ala Asp Asp Ser Gly Ash Gly Met Glu Ile Leu 20 25 30	i Q.E.												
ott bog aag gog ggt dad gaa atg gag aad dtd gaa gtd tot gat ogg Phe Pro Dys Ala Gly His Glu Met Glu Ash Leu Glu Val Ser Ash Arg 35 40 45	: 44												
gto and ong type og: ann gan ggt ban oft tgt gat deg ata til Cha Val Lys Pro Dys Ard Lys Blu Gly Gln Leu Cys Asp Pro Ile 140 Gln 50 60	" 1 h												
aad too tyd dyt ygo tyg aat tyd ytt ott tto tyd yto tydaaddadd Asn Cys Dys Arg Gly Trp Asn Cys Val Leu Phe Cys Val 65 70 75	241												
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o-Tyr; Xaa at residue . 2 ma; be Trp or bromo-Trp

<4(6) 4

Val Lys Xaa Cys Arg Lys Xaa Gly Gln Leu Cys Asp Xaa Ile Xaa Gln 5 10 15	
Asn Cys Cys Arg Gly Xaa Asn Cys Val Leu Phe Cys Val 20	
0210) 5 0211: 09 0210: PPT 0213: Comus gloriamaris	
<pre>MADE: SITE MADE: SITE MADE: 1)(D9) MADE: Made at residues 3 and 15 may be pro or hydroxy-Pro; Made at residue 3 and 15 may be pro or hydroxy-Pro; Made at residue 22 may be may be Glu or gamma-carboxy-Glu; Made at residue 22 may be or bromo-Trp; Made at residue 17 may be Tyr, 125-I-Tyr, mono-ie-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr</pre>	Trp
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Val Lys Maa Cys Arg Lys Maa Gly Gln Leu Cys Asp Maa Ile Phe Gln 1 10 15	
Asn Cys Cys Arg Gly Xaa Asn Cys Val Leu Maa Cys Val 20 - 25	
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020 - 021 - 000 021 - 146)235-	
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totonitoni tiigtgietg adaga teg ate agg atg tge egt aga gaa get Ser Ile Arg Met Cys Arg Arg Glu Ala 1 5	172
can but tipt gat dog att tut dan and tigd tigd dat gigd tug titt tigd. Gln New Dys Asp Pro Ile Phe Gln Ash Cys Dys His Gly Lew Phe Cys 10 15 20 25	220
gtt tig ind tip gib taaaactadd gigaigidti diddiddoot diagiagiag Val Leu 7il Dys Väl 	2 * 7
rajgiggili otitagagga tocaaqotta eqtangeqty cakgegaegt catagetett	335
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apportggogt tacodaactt aatogootty cagoacatbo cootttogod agotggogta	455
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1111
SITE
(1)..(27)
       Maa at residue 3 is Glu or gamma-carboxy-Glu; Xaa at residue 11 m
       ay be Pro or hydroxy-Pro
Met Cys Arg Arg Xaa Ala Gln Leu Cys Asp Xaa Ile Phe Gln Asn Cys
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20150- 9
00110- 546
001.5- 5MA
00130- Ochus textile
C2.11 - CDS
(4)) - 9
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Arg Asn Jly Met Glu Asn Leu Phe Fro Lys Ala Gly His Glu Met Glu
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243

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Pro cr hydroxy-Pro; Xaa at residue 23 may be Trp or bromo-Trp; Xa a at residue 24 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr

, C-sulpha-Tyr or O-phospho-Tyr

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<210 -0011 -0012 -0013	13 - 2 13 - I	ll 2011 DNA Comus	5 ⇔Mić	aria												
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ter qr:	adā Thr	tto Ele	gt c Val 20	acg Thr	gct Ala	gat Asp	gac Asp	tct Ser 25	gga Gly	aat Asn	gga Gly	ttg Leu	ggg Gly 30	aat Asn	ett Leu	96
ertt Phe	.ca	aat Asn sq	g∙:a A.a	dat His	cac His	gaa Glu	atg Met 40	aag Lys	aac Asn	ccc Pro	gaa Glu	gcc Ala 45	tct Ser	aaa Lys	ttg Leu	144
alad Asn	aag Lys W	agg Arg	t ja Cys	gtt Val	cca Pro	cac His 55	gag Glu	ggc Gly	cct Pro	tgt Cys	aat Asn 60	tgg Trp	ctt Leu	aca Thr	caa Gln	192
140 Asn 55	tyc Cys	t.40 Cys	aut Ser	ggt Gly	tat Tyr 70	aat Asn	tgc Cys	atc Ile	att Ile	ttt Phe 75	ttc Phe	tgc Cys	cta Leu			234
= iak	443t	aut (gt ja	tgta	tt af	tatta	ccac:	E C								265
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< 400	0 .	1 3														
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Trp	.h.r	Phe	Val 20	Thr	Ala	Asp	Asp	Ser 25	Gly	Asn	Gly	Leu	Gly 30	Asn	Leu	
Fhe	Ser	Ash 35	Ala	His	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	

Asn Cys Cys Ser Gly Tyr Asn Cys Ile Ile Phe Phe Cys Leu

Asn Lys Arg Cys Vai Pro His Glu Gly Pro Cys Asn Trp Leu Thr Gln 50 60

65		7	()					75						
		ıria												
<.122:- (<.123:- X	ITE 1)(27) aa at re 5 may be r bromc- yr, di-i	esidue e Glu -Tro:	or g Kaa	amma at r	-ca: cesi	rb⊙x du⊕	y-G1 19 m	u; X ay b	aa a e Ty	t re r, 1	sıau 25 - I	e tu	шау	rie irti
<400 - 1														
Cys Wal	Xaa His	Xaa G 5	Sly X	aa (Cys .	Asn	Xaa 10	Leu	Thr	Gln	Asn	Су <i>з</i> 15	Cys	
Sex Gly	Maa Asri 20	Cys I	le I	le E	Phe .	Phe 25	Cys	Leu						
		111												
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tga ica Trp Thr	tto qto Phe Val	acg (Thr A	gct g Ala <i>F</i>	at Asp	gac Asp	tco Ser 25	gga Gly	aat Asn	gga Gly	atg Met	gag Glu 30	aat Asn	ctt Leu	96
The Pro	tag dca Lys Ala 35	Arg .	His (∃⊥u	atg Met 40	gag Glu	aac Asn	ctc Leu	gaa Glu	gac Asp 45	tct Ser	aāa Lys	cac His	144
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cag aga Gln Arg 65	cag gto Gln Val	_ Jys	cág Pro (70	tgt Cys	cgt Arg	aaa Lys	gaa Glu	cat His 75	caa Gln	ctt Leu	tgt Cys	gat Asp	ctg Leu 80	240

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288

321

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cag Gln 65		ı egg ı Arg	gts Val	aāg Lys	dag Pro 70	tực Cys	agt Ser	gaa Glu	gaa Glu	ggt Gly 75	saa Gln	ctt Leu	tgt Cys	qat Asp	cca Pro 80	240
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1217 - Conus dalli

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DINA Conus textile

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yr or C-phospho-Tyr

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Cys Asp Gly Xaa Cys Ile Val Leu Val Cys Thr

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DNA<2120 <2130 Conus magus

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144 ttt tog mat goa dat dad gaa atg aag aad dod gaa god tot aga ttg Phe 3-r Asn Ála His His Glu Met Lys Asn Pro Glu Ála Ser Lys Leu

aac aag agg tgg tgc aaa caa agc ggt gaa atg tgt aat ttg tta gac 192 Asn Lys Arg Trp Cys Lys Gln Ser Gly Glu Met Cys Asn Leu Leu Asp

caa aac tgc tgc gac ggc tat tgc ata gta ott itc tgc aca 234 Gin Asn Cys Cys Asp Gly Tyr Cys Ile Val Leu Val Cys Thr

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tgg and tit gee acg get gat gae eee aga aat gga tig ggg aat eit

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< 2		31 27 FRT Con	us d	ista	ns												
<2 2		Хаа	(2 at	resi		arha	→ 17 = ()	1 11 *	1 1/1	al l	## 25 L CJ	UE 2	U mica	A M.	sidue Tyr, ospho		y be l-Ty
- 4	(; () →	1 ر															
Ха :	a Jy	Ly	s Gl	n Se 5	er Gl	y Xā	ıa '	t Gy	As 10	ri I.d)	u Le	eu As	p Gl	n As 15	sn Cys		
G.Z	rs As	sp Gi	Ly Xa	a Cy	/s Il	Le Va	al Le	eu Va	al Cy	/s Th	nr						

- 41	
/11	
10000	
100301	
Pa Y	

			20					25								
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tgg Trp	aca Thr	ttt Phe	gcc Ala 20	acg Thr	gct Ala	gat Asp	gac Asp	ccc Pro 25	aga Arg	aat Asn	gga Gly	ttg Leu	30 GJA GGA	aat Asn	ctt Leu	96
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aac Asn	aag Lys 50	agg Arg	tgg Trp	tgc Cys	aaa Lys	caa 31n 55	agc Ser	ggt Gly	gaa Glu	atg Met	tgt Cys 60	aat Asn	ttg Leu	tta Leu	gac Asp	192
caa Gln 65	aac Asn	tgc Cys	tga Cys	gag Glu	ggc Gly 70	tat Tyr	tgc Cys	ata Ile	gta Val	att Leu 75	gtc Val	tga Cys	aca Thr			234
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Phe	Ser	Asn 35	. Ala	His	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	
Asn	Lys 50	s Arg	Trp	Cys	: Lys	s Gln 93	Ser	Gly	· Gla	Met	Oys (d)	: Asn	. Leu	. Leu	ı Asp	
·ili. Pala	Ası	ı Cys	s Cys	s Glu	ı Gly 70	у Туг	Cys	: 114	1 T. 1	Let 75	ı Val	. Cys	: Thi	-		
· 21		34 27														

Trp Thr Fhe Ala Thr Ala Asp Asp Fro Arg Asn Gly Leu Glu Asn Leu 20 25 30
Phe Leu Lys Ala His His Glu Met Asn Pro Glu Ala Ser Lys Leu Asn 35
Glu Arg Cys Leu Gly Gly Glu Val Cys Asp Ile Phe Phe Prc Gln 55 60
Cys Cys Gly Tyr Cys Ile Leu Leu Phe Cys Thr 75
01100 37 01100 25 0120 PRT 01130 Conus dalli
00220 SITE (25) (25) Maa at residue 6 may be Glu or gamma-carboxy-Glu; Xaa at residue 10 may be Pro or hydroxy-Pro; Xaa at residue 18 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr
-150 - 3
Dys Leu Gly Gly Gly Xaa Val Cys Asp Ile Phe Phe Xaa Gln Cys Cys 1 10 15
Gly Maa Cys Ile Leu Leu Phe Cys Thr 23 25
2210 3 3 c c c c c c c c c c c c c c c c c
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Acc jec igg aca tit ged acg get gat gad dec dec aga aat gga tig ggg 159 Thr Ala Isp Thr Phe Ala Thr Ala Asp Asp Pro Arg Ash Gly Leu Gly 15 20 25 30
Ast att tit tog aat goa oat oad gaa atg aag aat ood gaa goo tot 207 Asn Ile Phe Ser Asn Ala His His Glu Met Lys Asn Fro Glu Ala Ser 35 40 45
aaa ttg aac aag agg tgc cgt cta ggg gct gaa agt tgt gat gta att 255 Lys Leu Asn Lys Arg Cys Arg Leu Gly Ala Glu Ser Cys Asp Val Ile 50 55 60

toa caa aac tgc tgc caa ggc acg tgc gtt ttt ttc tgc tta cca Ser Gln Asn Cys Cys Gln Gly Thr Cys Val Ehe Phe Cys Leu Pro 65	300
igatgiette tatteteete igigetaeet ggetigatet tieattageg egigeetite	360
actggttatg aacceeetga teegaetete tggeageete gggggtteaa cateeaaata	420
aaacqacaqc acaatgacaa a	441
adactya suge. asaacgaoda a	
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Trp Thr Phe Ala Thr Ala Asp Asp Pro Arg Asn Gly Leu Gly Asn Ile 20 25 30	
Phe Ger Asn Ala His His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 45	
Asn Lys Arg Cys Arg Léu Gly Ala Glu Ser Cýs Asp Val Ile Ser Gln	
Asn Cys Cys Gln Gly Thr Cys Val Phe Phe Cys Leu Pro	
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Cys Arg Leu Gly Ala Xaa Ser Cys Asp Val Ile Ser Glr. Gr. Cys Cys 1 10 15	
I'm Mly Thr Cys Val Phe Phe Cys Leu Maa 20 25	
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tto ttg acc goo tgg aca tto goo acg got gat gac coc aga aat gga Phe Leu Thr Ala Trp Thr Phe Ala Thr Ala Asp Asp Pro Arg Asn Gly 15 20 25	57												
ttg gag aaa ott ttt teg aat aca cat cac gaa atg aag aac occ gaa Leu Glu Lys Leu Phe Ser Asn Thr His His Glu Met Lys Asn Pro Glu 35 40) 5												
ged tot ama tig ame mag agg tig ama cam get gat gam tot tigt mat Alm Ser Lys Leu Asn Lys Arg Cys Lys Gln Alm Asp Glu Ser Cys Asn 50 55 60	53												
gta tit tea ett gae tge tge ace gge tta tge ttg gga tte tge gta $$30$ Val Fhe Ser Leu Asp Cys Cys Thr Gly Leu Cys Leu Gly Phe Cys Val 65 70)1												
neg tgatghette taeteecete tgtgetaeet ggettgatet ttgattggeg 35 Ser	54												
tgtgeettte attggttatg aaceceetg ateegattet ttggeggeet egggggttea 41	. 4												
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Phe Ser Asn Thr His His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45

Asn Lys Arg Cys Lys Gln Ala Asp Slu Sor Cys Asn Val Phe Ser Leu 50 60

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das Sug agg tgs ada saa got gat gad sht tgt gat gta ttt toa sit Asr. Lys Arg Cys Lys Gln Ala Asp Glu Pro Sys Asp Val Phe Ser Leu

gaå tgo tyc acc ggd ata tgt ott gga til tge acg tgg tgatgtotte.

Glu Cys Cys Thr Gly Ile Cys Leu Gly Phe Cys Thr Trp

7.0

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cateaceaag atg aaa etg acg tge atg atg ate gtt get gtg etg tte

Met Lys Leu Thr Cys Met Met lle Val Ala Val Leu Phe ttg acc gee tgg aca tte gee acg get gat gae tee age aat gga ttg Leu Thr Ala Trp Thr Phe Ala Thr Ala Asp Asp Ser Ser Asn Gly Leu 157 gag aat ett tit tig aag goa eat eae gaa aig aac eee gaa gee tet 205 Gli Asn Leu Phe Leu Lys Ala His His Glu Met Asn Pro Glu Ala Ser 40 aag tig aac gag agg igc cit gat gci ggi gaa git igi gat att tii 253 Lys Leu Asn Glu Arg Cys Leu Asp Ala Gly Glu Val Cys Asp Ile Phe 50 295 tit doa ada igo igo ggo tat igo att ett ett ite igo goa Phe Pro Thr Cys Cys Gly Tyr Cys Ile Leu Leu Phe Cys Ala flaaaastadd gigaigidii diadiddddi sigigdiadd iggdiigaid iiigathggd 355 415 qeqtaccett cactggttat gaaacceetg atecagetet etggaggeet egggggttea 454acatocaaat aaagogaca √210: 51 <211: 75 PRT ·:212;-4213> Conus textile <400> 51 Met Lys Leu Thr Cys Met Met Ile Val Ala Val Leu Phe Leu Thr Ala Trp Thr Phe Ala Thr Ala Asp Asp Ser Ser Asm Gly Leu Glu Asn Leu 20 Phe Leu Lys Ala His His Glu Met Asn Pro Glu Ala Ser Lys Leu Asn 31u Arg Cys Leu Asp Ala Gly 31u Val Cys Asp Ile Phe Phe Pro Thr 50 60 Cys Cys Gly Tyr Cys Ile Leu Leu Phe Cys Ala 52 <2105 211> 25 2:25 PRT Conus textile 220= CZ215 SITE <222> (1)...(25)Xaa at residue 6 may be Glu or gamma-carboxy-Glu; Xaa at residue <223> 13 may be Pro or hydroxy-Pro; Xaa at residue 18 may be Tyr, 125-

I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr.

```
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Cy.; Leu Asp Ala Gly Xaa Val Cys Asp fie The Phe Xaa Thr Cys Cys 1 5 10
Gly Xaa Cys Ile Lea Leu Phe Cys Ala
+01100 50
+0110 10
+01120 PMT
+01130 Conus textile
-CONTO
       CITE
1221
\pm 1)...(26)
       Maa at residues 3 and 9 may be Glu or gamma-carboxy-Glu; Xaa at r
       esidue 7 may be Pro or hydroxy-Pro
ciùù.
ly: The Maa Gln Phe Asp Maa Cys Maa Met Ile Arg His Thr Cys Cys
                                       10
7al (ely Val Cys Phe Leu Met Ala Cys Ile 20\,
<2200
3.1.2.1
       SITE
       1)..(26)
       \mathbb{R}_{444} at residues 3, 7 and 13 may be Pro or hydroxy-Pro; Xaa at re
       sidue 13 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sul
       pro-Tyr or O-phospho-Tyr
2:)·) ::
Cys Ala Maa Phe Lei His Xaa Cys Thr Phe Phe Phe Xaa Ash Cys Cys
Asn Fer Maa Cys Val Gln Phe Ile Cys Leu
20 25
< 110 - 5%
<311 - 2.00
4212 ← DNA
4.113 - Conus omaria
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ttt tog aag aba caa cac gaa atg aag aac ooc gaa goo tot aaa ttg — 144 Phe Ber Lys Thr Bln His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 33 — 40 — 45	
asc aug aug tyc cta gea gaa cat yaa act tgt aat ata ttt aca caa 192 Asn Lys Arg Cys Leu Ala Glu His Glu Thr Cys Asn Ile Phe Thr Gln 50	
aac tgc tgc gaa ggc gtg tgc att ttt atc tgc gta caa gct cca gag Asn Cys Cys Glu Gly Val Cys Ile Phe Ile Cys Val Gln Ala Pro Glu 65 70 80	
tgatgratte tectococte 260	
<2105	
94009 56	
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Trp Thr Ehe Ala Thr Ala Asp Asp Pro Arg Asn Gly Leu Glu Asn Phe 20 25 30	
Phe Ser Lys Thr Gln His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 45	
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<pre><210> 57 <211> 29 <212> PET <213> Conus omacia</pre>	
<pre><220: <221: SITE <222: (1)(29) -223. Xaa at residues 4, 6, 17 and 29 may be Glu or gamma-parboxy-Glu; Xaa at residue 28 may be Pro or hydroxy-Pro</pre>	
~400≥ 57	
Cys Leu Ala Xaa His Xaa Thr Cys Asn Ile Phe Thr Gln Asn Cys Cys 1 5 15	

法事法 不是有主義 法人 医海绵性 医肠囊毒素

Xaa Gly Val Cys Ile Phe Ile Cys Val Gln Ala Xaa Xaa <210 - 59 \$211 - 261 \$212 - DMA <213 - Conus omaria <220; 3221: CDS <222 - (1)..(L31) <4000 58 48 atg aaa otg act gte atg atg atc gtt get gtg etg tte ttg acc gee Met Tys Leu Thr Val Met Met Ile Val Ala Val Leu Phe Leu Thr Ala 96 tag lea tit gee acg get gaa gae ees aga eat gga tig gag aat ett Trp Thr Fhe Ala Thr Ala Glu Asp Pro Arg His Gly Leu Glu Asn Leu 144 tit tog aag gea cat dad gaa atg aag aad dot gaa gad tot aaa ttg Phe Ser Lys A.a His His Glu Met Lys Asn Pro Glu Asp Ser Lys Leu 192 yac aag agg tur att cra bat itt gan oot tgt gan bog ata byd bab Asp lys Arg Cys Ile Pro His Phe Asp Pro Cys Asp Pro lle Arg His acc igo tgo tot ggo otg tgo ota eta ata geo tgo ato taaaactgoo 241 Thr Cys Cys Phe Gly Leu Cys Leu Leu Ile Ala Cys Ile 261 grigatigatett eteroceate <2100 < 212. PET <213: Conus omaria <400> 59 Mot Lys Ieu Thr Val Met Met Ile Val Ala Val Leu Phe Leu Thr Ala Trp Thr Fhe A.a Thr Ala Glu Asp Pro Arg His Gly Leu Glu Asn Leu Phe Ser Lys A:a His His Glu Met Lys Asn Pro Glu Asp Ser Lys Leu 40 Asp Lys Arg Cys Ile Pro His Phe Asp Pro Cys Asp Pro Ile Arg His Thr Cys Cys Phe Gly Leu Cys Tou Let Ile Ala Cys Ile

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Phe Gly Leu Cys Leu Leu Ile Ala Cys Ile 20 25	
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tta toa Bat goa dat aad gaa atg aag aad dod gaa god tot ada ttg Leu Ber Asn Ala His Asn Glu Met Lys Asn Pro Blu Ala Ser Thr Leu 35 40 45	144
aac gag agg tgc ott ggg tit ggt gaa got tgt ott ata ott tat toa Asn Glu Arg Cys Leu Gly Phe Gly Glu Ala Cys Leu Ile Leu Tyr Ser 50 55	192
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gtgatgtett etestesset s	259
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· 400% 62	
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Trp Thr Phe Val Thr Ala Glu Asp Pro Arg Asp Gly Leu Lys Asn Leu 20 25 30	

Leu Ser Asn Ala His Asn Glu Met Lys Asn Fro Glu Ala Ser Thr Leu 40 Asn Glu Arg Cys Leu Gly Phe Gly Glu Ala Cys Leu Ile Leu Tyr Ser 55 5.0 Asp Cys Cys Gly Tyr Cys Val Gly Ala Ile Cys Leu 65 70 75 ₹210: 63 ₹211: 23 42121 PET (213) Conus omaria (220):-4221. SITE (1)..(25)Xaa at residue m6 ay be Glu or gamma-carboxy-Glu; Xaa at residues 12 and 18 may be Tyr, 125-I-Tyr, meno-iodo-Tyr, di-iodo-Tyr, O-s ulpho-Tyr or O-phospho-Tyr (40) 6: Tys Leu Gly Phe Gly Xaa Ala Cys Leu Ile Leu Xaa Ser Acp Cys Cys Sly Haa Cys Val Gly Ala Ile Cys Leu \$210 · 64 <211 202 <212 DNA <213 - Conus aulicus <220 ⋅ 4221 · CDS <222 (1)..(240) \$400× 64 atg aaa otg acg tgt gtg atg atc gtt gct gtg ctg ttc ttg acc gcc Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 48 tgg aca the god acg got gat gad edd aga aat gga tig gag aat ett Trp Thr Phe Ala Thr Ala Asp Asp Pro Arg Ash Gly Leu 61. Ash Leu tit tog aag aca caa cac aaa aig aag aac poo gaa goo toi aaa ttg Phe Ber Lys Thr Gln His Lys Met Lys Asn Pro Glu Ala Ser Lys Leu han aaq agg tgc aaa gca gaa aat gaa obt tg' aat ata ttt ata caa Asn Lys Arg Cys Lys Ala Glu Asn Glu Leu Cys Asn Ile Phe Ile Gin Aac tgc tgc gac ggg acg tgc att oft atc 'gc ata saa aat sca dag Asn Cys Dys Asp Gly Thr Cys Leu Lêu Ile Cys Ile Gln Asn Pro Gln 240

262 tgatgtcttc tetectacce to <210> 65 <211> 30 <2120 PRT <213> Conus aulicus <4000 65 Met I.ys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala Trp Thr Fhe Ala Thr Ala Asp Asp Pro Arg Asn Gly Leu Glu Asn Leu 20 Phe Ser Lys Thr Gln His Lys Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45 Asn !ys Arg Cys Lys Ala Glu Asn Glu Leu Cys Asn Ile Phe Ile Gln 50 60 Asn Cys Cys Asp Gly Thr Cys Leu Leu Ile Cys Ile Gln Asn Pro Gln $\frac{35}{70}$ <2100 66 <2111 2.3 BB.T 22125 .2130-Conus aulicus 4220-≈221> SITE F12221-(1)..(29)Kaa at residues 4 and 6may be Glu or gamma-carboxy-Glu; Xaa at re 12233 sidue 28 may be Pro or hydroxy-Pro <4005 56 Cys Lys Ala Xaa Asn Xaa Leu Cys Asn Ile Phe Ile Gln Asn Cys Cys Asp Gly Thr Cys Leu Leu Ile Cys Ile Gl
n Ash Maa Gl
n 20 $\,$ 25 0 < 210: ~2117 258 s 2121 ARC < 213 Conus aulicus . 120 - 221: DDS - 222 · (1)..(228) ₹400 / 67 arg aaa ctg acg fgc gtg atg atc gff gct gtg stq ttg ttg acc gcc Met Lys Leu Thr Cys Val Met lie Val Ala Val Leu Bhe Leu Thr Ala l 5

tgg aca t Trp Thr P	itt gcc Pne Ala 20	acg Thr	qct Ala	gat Asp	gac Asp	ccc Pro 25	aga Arg	aat Asn	gga Gly	ttg Leu	gat Asp 30	aat Asn	egt Arg		96
ttt tog a Phe Ser I	aag gca Lys Ala 35	agt Arg	cac His	gaa Glu	atg Met 40	aat Asn	aac Asn	aga Arg	aga Arg	gcc Ala 45	tot Ser	aaa Lys	ttg Leu	1	4.4
aac aaq a Asn Lys <i>F</i> 50	agg tgc Arg Cys	ctt Leu	gag Glu	ttt Phe 55	ggt Gly	gaa Glu	ctt Leu	tat Cys	aat Asn 60	ttt Phe	ttt Phe	ttc Phe	cca Pro	1	92
acc tgc t Thr Cys (65	tgo ggo Cys Gly	tat Tyr	tgo Oys 70	gtt Val	ctt Leu	ctt Leu	gtc Val	tgc Cys 75	cta Leu	taaa	actad	ecg		2	38
tgatgtctt	to tott	aceat	E.C											2	58
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· 400> 60					- 1		7.1	17= 1	T have	Pho	Lou	Thr	Δla		
Met Lys : 1	Leu Thi	Cys 5	Val	Met	ile	Va:	A1a 10	Val	าคน	FILE	ьеч	15	ma		
Trp Tar	Fre Ala 20	a Thr	Ala	Asp	ąeA	Pro 25	Arg	Asn	Gly	Leu	Asp 30	Asn	Arg		
Phe Ser	Lys Al	a Arg	His	Glu	Met 40	Asn	Asn	Arg	Arg	Ala 45	Ser	Lys	Leu		
Asn Lys 50	Arg Cy	s Leu	. Glu	Phe	Gly	· Glu	Leu	Cys	Asr 60	Phe	Phe	Phe	Pro		
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	101 10	resid	- · · · h	o Flyo	e ex	0.1701	YOUVI.			7.7 PT 1		i talle Co		. y	1 y -

- 400> - 69

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Gly :	Xaa	Cys	Val 20	Leu	Leu	Val	Cys	Leu 25								
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tgg Trp	uca Thr	ttt Phe	gtc Val 20	atg Met	gct Ala	gat Asp	gac Asp	tcc Ser 25	gga Gly	aat Asn	gga Gly	ttg Leu	gaa Glu 30	aat Asn	ctg Leu	96
titit Phe	.cg .ler	aag Lys 35	gca Ala	cat His	cac His	gaa Glu	atg Met 40	aag Lys	aac Asn	cct Pro	gaa Glu	goc Ala 45	tat Ser	aaa Lys	ttg Leu	144
aac Asn	ag Lys	agg Arg	tgc Cys	gct Ala	caa Gln	agc Ser 55	agt Ser	gaa Glu	tta Leu	tgt Cys	gat Asp 60	gcg Ala	ctg Leu	gac Asp	tca Ser	192
gac Asp 63	.gc	tgo Cys	agt Ser	ggt Gly	gtt Val 70	tgc Cys	atg Met	gta Val	ttt Phe	ttc Phe 75	tgc Cys	cta Leu	taaa	aacto	gaa	241
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Phe	Ser	Lys 35	Ala	His	His	Glu	Met 40	Lys	Asn	Pro	ilu	Ala 45	Ser	Lys	Leu	
Asn	Lys 50	Arg	Çys	Ala	Gln	Ser 55	Ser	Glu	Lou	Cys	Asp	Ala	Leu	Asp	Ser	

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< 4.00 >														_	
Cys Ala	a Gln	Ser S	Ser >	Kaa I	Jeu (Cys .	Asp i	Ala : 10	Leu A	Asp S	Ser A	Asp (Cys (15	Cys	
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tta t: Lei Se	ng aat er Asn 35	gca Ala	ogt Arg	cat His	gaa Glu	atg Met 40	aag Lys	aac Asn	ggc Pro	gaa Glu	gee Ala 45	tat Ser	aaa Lys	ttg Leu	144
aac g Asr G 5	ag agg Lu Arg	tigc Cys	ctt Leu	Gly ggg	ttt Phe 55	ggt Gly	gaa Glu	get Ala	tgt Cys	ett Leu 60	atg Met	ctt Leu	tat Tyr	tca Ser	192
gac t Asp C 65	ad tgc ys Cys	agc 3er	tat Tyr	tgc Cys 70	gtt Val	ggt Gly	get Ala	gto Val	tga Cys 75	ota Neu	taa	aact	acc		238
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Met 1	Lys Le	u Thi	Суя	s Val	L Me₁	Th	r Va	_ A1	a val	r ne.	المناعي	0 1.0	15		

Trp Thr Phe Val Thr Ala Glu Asp Pro Arg Asp Gly Leu Arg Asn Leu Leu Ser Asn Ala Arg His Glu Met Lys Asn Fro Glu Ala Ser Lys Leu Asn Glu Arg Cys Leu Gly Phe Gly Glu Ala Cys Leu Met Leu Tyr Ser 5 (I Asp Cys Cys Ser Tyr Cys Val Gly Ala Val Cys Leu 65 <2100° 75 <2110: 25 <2120 PRT <213: Conus distans ₹220. SITE <221 -Xaa at residue 6 may be Glu or gamma-carboxy-Glu; Xaa at residues (1)..(25)<222> 12 and 18 may be Tyr, 125-I-Tyr, meno-iode-Tyr, di-iode-Tyr, O-8 ulpho-Tyr or O-phospho-Tyr <400> 75 Cys Leu Gly Phe Gly Xaa Ala Cys Leu Met Leu Xaa Ser Asp Cys Cys Ser Xaa Cys Val Gly Ala Val Cys Leu <210> 76 <211> 262 <212> DNA <213> Conus pennaceus <22(I> <221> CDS <2225 (1).. [231] atg aaa ctg acg tgc ctg atg acc gtt gct gtg ctg ttc ttg acc gcc Met Lys Leu Thr Cys Leu Met Thr Val Ala Val Leu Phe Leu Thr Ala <400> 76 tgg aca ttt gcc acg gct gaa gac ccc aga aat gga ttg gag aat ctt Trp Thr Phe Ala Thr Ala Glu Asp Pro Arg Asn Cly Leu Glu Asn Leu 90 tit 'og aag goa oat dad gaa atg aag aar oot maa gad tot aaa tig The Ser Lys Ala His His Glu Met Lys Ash Pro Glu Asp Ser Lys Leu gad aag agg tgd gtt aaa tat ott gad odt tgt gad atg tta dgd dad Asp Lys Arg Cys Val Lys Tyr Leu Asp Pr - Cys Asp Met Leu Arg His 192 and tgo tgo ttt ggo otg tgo gtå ota ata god tgo atd ; aaaactgoo 24.

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ttt tog Phe Ser	aat (Asn <i>l</i> 35	gca Ala	cat His	cac His	gaa Glu	atg Met 40	aag Lys	aaç Asn	ccc Pro	gaa Glu	get Ala 45	tüt Ser	aaa Lys	ttg Leu	144
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Trp Thr	Phe	Ala 20	Thr	Ala	Asp	Asp	Fro 25	Arg	Asn	. Sly	Leu	Gly 30	Asn	Leu	
Phe Ser	Asn Bi	Alä	His	His	Glu	. Met 40	Lys	a Asr	ı Pro	glu	: Ala 45	Ser	lys	Leu	
Asn Glu 50	. Arg	Cys	: Lei	ı Gly	/ Phe 55	Gly	y Glu	ı Val	l Cys	s Asr 60	n Ph∈	e Ph∈	≘ Ph€	e Pro	
Asn Cys 65	S Cys	Ser	г Туз	r Cys 70	s Val	l Ala	a Lei	ı Va.	l Cy: 75	s Let	l				
		ıs pe	enna	geus											
	Xaa	.(2 at	resi												residue yr, 125-I pho-Tyr

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tgg ada sto Trp Thr Phe	gcc acg g Ala Thr A 20	ct gat q la Asp A	gad tod Asp Ser 25	agc aat Ser Asn	aga ctg Gly Leu	gag a Glu A 30	aat ct Asn Le	t 96 u
ttt tig aag Phe Ser Lys 35	gca cat c Ala His H	is Giu r	atg aag Met Lys 40	aac ccc Asn Pro	gaa goo Glu Ala 45	tat s Ser I	aaa tt Lys Le	g 144 u
aac aag agg Asn Lys Arg 5)	tgc att c Cys Ile P	ca caa i ro Gln ! 55	ttt gat Phe Asp	cct tgt Fro Cys	gac atg Asp Met 60	gta (Val <i>i</i>	egt ca Arg Hi	ic 192 s
act tgc tgc Thr Cys Cys 65	Lys Gly I	tg tgc : eu Cys '	gta cta Val Leu	ata god Ile Ala 75	tgo tot Cys Ser	aaa a Lys'	act go Thr Al 80	. u
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PNL Ner Lys 39	s Ala His	His Glu	Met Lys 40	s Asn Fr	e Glu Al 45	a Ser	Lys I	eu
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Cys Il	e Xaa G	iln F	he A	Asp >	Kaa (Cys A	Asp 1	Met '	Val I	Arg h	dis S	Thr (Cys (15	Cys	
Lys Gl	y Leu C	Cys V	/al I	Leu I	Ile .	Ala (Cys 25	Ser.	Lys '	Thr A	Ala				
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tgg 19 Trp Il	ca tto hr Phe	gcc Ala 20	acg Thr	gct Ala	gat Asp	gac Asp	dod Pro 25	aga Arg	aat Asn	gga 31y	ttg Leu	gag Glu 30	aat Asn	ttt Phe	96
ttt t Phe 3	og aag er Lys 35		caa Gln	cac His	gaa Glu	atg Met 40	aag Lys	aac Asn	ccc Pro	gaa Glu	gcc Ala 45	tat Ser	aaa Lys	ttg Leu	144
Asn L	ag agg ys Arg	tgc Cys	aaa Lys	gca Ala	gaa Glu 55	agt Ser	gaa Glu	gct Ala	tgt Cys	aat Asn 60	ata Ile	att Ile	aca Thr	caa Gln	192
ääc t Asn C	ga tiga Ys Cys	gac Asp	ggc Gly	aag Lys 70	tgc Cys	ctt Leu	ttt Phe	ttc Phe	tga Cys	ata Ile	caa Gln	att Ile	cca Pro	gag Glu 80	240
υβ • matρ	jtatta t	-abt:	deca.	tc											260
2011(1 2113	· & 6 · 30 · PRT														
	> 86												,,	r. 3	
Мет. 1	Lys Leu	Thr	Cys 5	: Leu	ı Met	Il€	e Va.	1 Ala 10	a Val	L Lei	ı Ph∈	ş Lei	ı Thi 15	r Ala	

Trp Thr Phe Ala Thr Ala Asp Asp Pro Arg Ash Gly Leu Glu Ash Phe 20 30	
Phe Ser Lys Thr Gln His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40	
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agg tgc att gac ggt ggt gaa att tgt gat att ttt ftt coa aac tgc Ann Cys Ilo Asp Gly Gly Glu lie Cys Asp lie The The Pro Ash Cys L	1.56
igd agt ggg tgg tgd att att did gid tgd gda tgaaastadd gigaigteit Cys Ser Gly Trp Cys Ile Ile I u Va' Cys Ala 20 25	219
chantedect ctagtagraq taggedgeeg etetagagga tecaagetta egtaegegtg	279

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Pro Asn (Cys Cys Ser (20	Bly Trp Cys	Ilē Ile Leu 25	val Cys A	la N		
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Ser Gly	Xaa Cys Ile 20	Ile Leu Väl	Cys Ala 25				
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Ser Gly Xaa Cys Ile Val Leu Val Cys Ala 25	

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SITE

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(223> (1)..(25)

Xaa at residues 3 and 6 may be .iu or gamma-carboxy-Glu; Xaa at residue 13 may be Pro or hydroxy-Pro; Xaa at residue 18 may be Tyr esidue 13 may be Pro or hydroxy-Pro; Xaa at residue 18 may be Tyr , 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phosph o-Tyr

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tys sta taäaactass gtgatgtsti stettssest skuytägtag täggnyynng Cys Leu	i v
stotagagga todaagotta ogtadgogtg datgogaegt datagotott otatagtgto	336
acctanatto anticactgg begingtitt acanogicgt gactgggana accortggcgt	396

in the standard and a second a second and a second a second and a second a second and a second a second and a second and a second and a second and a second a second and a second a second and a second	456
tacccaactt aatogoottg cageacated coetttejes agerggegta atagegaaga	516
ggeeegeace gategeeett eecaacagtt gegeageetg aatggegaat gggaegegee	534
stgtagoggo goattaag	J J 4
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Gly Kaa Cys Val Leu Leu Val Cys Leu 20 25	
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0400> 106 gatecatot gtecatecat ceattogite gitti, niger adaktgitadi adalaasoga	60
gatecator greeateest season, questionator greeateest season, questionator it graitet gas againt aaa aad saa tijo sut saa aat ggt Val Ser Asp Arg Ser Lys Lys Gin Cys Arg Gin Ash Giy 1	1.1.1
qua gtg tgt gat gcg aat ttg gca cac til tgc agt ggc ccg tgt ttt Blu Vai Cys Asp Ala Asn Leu Ala His Cys Cys Ser Gly Pro Cys Phe 15 20	155

200 eto tto tgt ota aad dag deg tgatgtotto tartocooto Leu Phe Cys Leu Asn Gln Pro R2105 107 <211> 36 <212 - PP.T <213 · Conus obscurus <400 - 107 Val Jer Asp Arg Ser Lys Lys Gln Cys Arg Gln Asn Gly Glu Val Cys Asp Ala Asn Leu Ala His Cys Cys Ser Gly Pro Cys Phe Leu Phe Cys Leu Asn Gin Pro 108 <210° <211: 32 <2121 FRT <2110 Conus obscurus <2200 <2210 SITE (1)..(32)Xaa at residue 10 may be Glu or gamma-carboxy-Glu; Xaa at residue <2221 ⋅ <223 · s 23 and 32 may be Pro or hydroxy-Pro <400> 108 Ser Lys Lys Gln Cys Arg Gln Asn Gly Xaa Val Cys Asp Ala Asn Leu 1 5 10 Ala His Cys Cys Ser Gly Xaa Cys Phe Leu Phe Cys Leu Asn Gln Xaa 109 <210> <211> 262 -211> DNA <213> Conus ammiralis <220> <221> CDS <222> (1)..(231) atg aaa ctg acg tgo gtg atg atc att get gtg etg tte ttg acc ged Met Lys Leu Thr Cys Val Met Die Die Ala Val Leu Phe Leu Thr Ala 10 10 15 tyg aca tit gec acg get gat gad tec oga dat gga rig gad dat ett 96 Trp Thr Phe Ala Thr Ala Asp Asp Ser Gly Asn Gly Leu Glu Asn Leu itt tog aag goa dat dad gaa atg aag aad ood aaa god tot aaa itg 144 Phe Ser Lys Ala His His Glu Met Lys Asn Pro Lys Ala Ser Lys Leu

			- /		
35		4 0		45	
aac aag agg tgc Asn Lys Arg Cys	act caa agc Thr Gln Ser 55	ggt gaa Gly Glu	ctt tgt ga Leu Cys Asj 60	t gtg ata gac p Val Ile Asp	cca 192 Pro
gae the tgc aat Asp Cys Cys Asn 65	aat ttt tgc Asn Phe Cys 70	att ata Ile Ile	ttt ttc tg Phe Phe Cy 75	c ata taaaacto s Ile	gcc 241
gtgatgtott otact	accat c				262
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	niralis				
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Trp Inr File Ala	Thr Ala Asp	Asp Ser 25	Gly Asn Gl	y Leu Glu Asn 30	Leu
Ene Per Lys Ala	His His Gla	n Met Lys 40	Asn Pro Ly	s Ala Ser Lys 45	: Leu
Asn Lys Arg Cys Sü	Thr Gln Sei	c Gly Glu	. Leu Cys As 60	sp Val Ile Asp)	Pro
Asr Cys Cys Asn	. Asn Pne Cy: 70	s Ile Ile	e Phe Phe Cy 75	ys Ile	
-210 111 -211 26 -211 PFT -210 Cinus and -221 SITE -221 (1).(20 -223 Xaa at 1	-	y be Glu droxy-Fr	or gamma-c	arboxy-Glu; X	aa at rowidue
<4)[> 111					
Cys Thr Gln Se	r Gly Xaa Le 5	eu Cys As	p Val Ile <i>I</i> 10	Asp Xaa Asp Cy	rs Cym C
Asn Asn Phe Cy 20	s Ile Ile P	ne Phe Cy 25	rs lle		
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gat Ala 10	gtg Val	otig Leu	tts Phe	ttg Leu	acc Thr 15	gcc Ala	tgg Trp	aca Thr	ttc Phe	gcc Ala 20	acg Thr	gct (Ala .	gat Asp	gac Asp	tcc Ser 25	99
gga Gly	aat Asn	gga Gly	ttg Leu	gag Glu 30	aaa Lys	ctt Leu	ttt Phe	tcg Ser	aat Asn 35	gca Ala	cat His	cac His	gaá Glu	atg Met 40	aag Lys	147
aad Asto	ope Pro	gaa Glu	gcc Ala 45	tct Ser	aat Asn	ttg Leu	aac Asn	aag Lys 50	agg Arg	tgc Cys	gct Ala	cct Pro	ttt Phe 55	ctt Leu	cac His	195
ctt l∈u	tgt Cys	acc Thr	ttt Ph.e	ttc Phe	ttc Phe	cca Pro	aac Asn 65	tgc Cys	tgc Cys	aac Asrı	ggc Gly	tat Tyr 70	tgc Cys	gtt Val	caa Gln	243
* t t	atc 11a 75	tgc	: cta : Leu	taa	aact.	act (gtga	tgtc	tt c	tatt:	gada.	t c				286
	11> 12>	113 77 PFT Conv	ıs te	extil	e											
	~ ~	113														
Me 1	t by	s Lei	u Thr	: Cys 5	s Met	Met	: Il∈	e Val	L Ala 10	val	. Leu	Phe	Leu	Thr 15	: Ala	
T r	p Ph	r Ph	e Ala 20	a Thi	r Ala	a Asp) Ası	25	r Gly	y Asr	n Gly	/ Leu	. GIV 30	ı Lys	s Leu	
Fli	le S∈	r As 35	n Al	a Hi	s Hi	s Gli	а Ме [:] 40	t Ly	s Ası	n Pro	o Glu	. Ala 45	sei	r Ası	r. Leu	
Is 8	sn L ₃	rs Ar	ng Cy	s Al	a Pr	o Ph 55	e Le	u Hi	s Le	u Cy	s Th 60	r Fhe	e Ph	e Ph	e Pro	
λς. •5¢•		ys Cy	ys As	n Gl	у Ту 70	r Cy	s Va	.1 G1	n Ph	e Il 75	е Су	s Le	u			
< <	21): 21:> 21:2> 21:3>	26 PR		iext:	ile											
₹,	220>															

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<400> 116

Conus marmoreus

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Phe Ser Lys Ala His His Glu Met Lys Asn Pro Lys Asp Ser Lys Leu 35 40 45	
Asr. Lys Arg Cys Leu Asp Ala Gly Glu Met Cys Asp Leu Phe Asn Ser 55	
Lys Cys Cys Ser Gly Trp Cys Ile Ile Leu Phe Cys Ala	
00.1(0: 117 0.110: 26 0.110: PFT 0.110: Conus marmoreus	
00.200 00.210 SITE 00.220 (1)(26) 00.220 Xaa at residue 6 may be Glu or gamma-carboxy-Glu; Xaa at residue 19 may be Trp or bromo-Trp	a)
<400 · 117	
Cys Leu Asp Ala Gly Xaa Met Cys Asp Leu Phe Asn Ser Lys Cys Cys 1 10 15	
Dys Leu Asp Ala Gly Xaa Met Cys Asp Leu Phe Ash Ser Lys Cys	
Cys leu Asp Ala Gly Xaa Met Cys Asp Leu Phe Ash Ser Lys Cys Cys 10 15	
Cys leu Asp Ala Gly Xaa Met Cys Asp Leu Phe Ash Ser Lys Cys Cys 10 10 15 Ser Tly Xaa Cys Ile Ile Leu Phe Cys Ala 25 <pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> <pre> </pre> <pre> <td></td></pre></pre></pre></pre>	
Cys leu Asp Ala Gly Xaa Met Cys Asp Leu Phe Ash Ser Lys Cys Cys 10 10 15 Ser Tly Xaa Cys Ile Ile Leu Phe Cys Ala 20 25 <therefore 15="" 25="" <therefore="" ala="" ash="" cys="" ile="" ile<="" leu="" lys="" phe="" ser="" td="" the="" tly="" xaa=""><td>5.1</td></therefore>	5.1
Cys leu Asp Ala Gly Xaa Met Cys Asp Leu Phe Ash Ser Lys Cys Cys 10	99
Cys leu Asp A.a Gly Xaa Met Cys Asp Leu Phe Ash Ser Lys Cys Cys 10 Ser Thy Xaa Cys Ile Ile Leu Phe Cys Ala 25 Cll + 118 Cll + 427 Cll + DNA Cll + Cosum marmoreus Cll + Cos Conus marmoreus Cll + ONA Cll + ONA Cll + ONA Cll + ONA Conus marmoreus Cll + Cos Cys Ala 25 Conus marmoreus Cll + ONA Cll + ONA Conus marmoreus Cll + Cos Cys Ala 25 Conus marmoreus Cll + ONA Cll + ONA Cll + ONA Conus marmoreus Cll + ONA Cll + ONA Cll + ONA Cll + ONA Conus marmoreus Cll + ONA Cll +	99

Lys As 45		Lys	Leu	Asn	Lys 50	Arg	Cys	Leu	Asp	Gly 55	Gly	Glu	Ile	Cys		
ggt at Gly Il 60	t ttg e Leu	tit Phe	cca Pro	agc Ser 65	tgc Cys	tgc Cys	agt Ser	ggg Gly	tgg Trp 70	tąc Cys	att Ile	gtt Val	ctc Leu	gtc Val 75	2	243
tg: ge Cy: Al		aasta	acc g	gtgat	gtot	t ct	acto	eect	. atg	gtact	acc	tggc	ettga	itc	2	299
tttgat	tggs (gagte	gedet	it da	actgg	gttat	. gaa	cccc	:ccu	gato	cgac	etc t	ctgg	jeggee	3	359
teggag	gtt5 .	aacat	todaa	aa ta	aaago	egaca	a oga	caat	gac	aaaa	aaaa	iaa a	aaaa	aaaaa	4	119
aaaaaa	аа														2	127
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Met ly 1	rs Lau	Thr	Ser 5	Met	Met	Ile	Val	Ala 10	Val	Leu	Pha	Leu	Thr 15	Ala		
Tro Th	nr Ehe	Val 2-0	Thr	Ala	Asp	Asp	Ser 25	Gly	Asn	Gly	Leta	Glu 30	Asn	Leu		
Phe 36	er Lys 35	Ala	His	His	Glu	Met 4)	Lys	Asn	Pro	Lys	Asp 45	Ser	Lys	Leu		
Asn Ly		Cys	Leu	Asp	Gly 55	Gly	Glu	Ile	Cys	Gly 60	Ile	Leu	Phe	Pro		
Ser I;	ys Cys	: \$er	Gly	Irp 70	Cys	Ile	Vāl	Leu	Val 75	Cys	Ala					
<110><111><111><112><113>	$\mathbb{P}[\mathbb{F}, T]$	ıs ma	.rmor	eus												
<20><20><21><22><22><223>	(1).	(26 at r nay b	esid	ue 6 o or	may hyd	be roxy	Glu -Pro	or g ; Xa	amma a at	-car res	box, idue	-01: 19	; Ка may	a at r Se Trp	resid or	lue bro
- :00>	120															
Cys L 1	eu Asp	o Gly	y Gly 5	z Kaa	a Ile	e Čvs	s Gly	Ile 10	. Let	ı Phe	Xaa	Ser	Cys 15	Cys		

Ser Gly Xaa Cys Ile Val Leu Val Cys Ala

	2.0		25				
	121 470 DHA Conus marm	noreus					
<.:20 · <::21 · <::22 ·	cbs (70)(303	3)					
400 - ព្រះជំនុំចា		itggs ttcaca	ngttt tcc	actgtcg	tetttggeat (catccaaaac	60
1. Q# JQ8					aa goa gag c u Ala Glu Le 10		111
					aga aat gga Arg Asn Gly		159
	i khe Ser L		His Ğlu I		aac cee gaa Asn Pro Glu		207
					tta tgt gat Leu Cys Asp 60		2.5.5
gaa caa Giu Glr	n aad tqc t n Asn Cys C	de tat acc Cys Tyr Thr	tat tgc : Tyr Cys : 70	ttt att Phe Ile	gta gtd tgd Val Val Cys 75	cot ata Pro Ile	303
1.aac1 ac	cogt galigts	ottot actocs	ctct gtg	atgeatg	gettgatett t	igatiggege	3 € 3
grigeret	tina lõtiggtt	tatga accecc	ctga tee	gactete	ttgeggeete a	aggggttcaa	423
dutteraa	iata aagoga	acacg aaaatg	aaaa aaaa	aaaaaaa	āāāāāāā		470
10 · 10 · · · · · · · · · · · · · · · ·	1. 2 7 : PhT						

- 4.13 Conus marmoreus
- < 400 / 1.12</pre>

Mot Lys Leu Thr Cys Met Met Ile Glu Ala Glu Leu Phe Leu Thr Ala 1 $$ 5 $$ 10 $$ 15

Tip Thr Phe Ala Thr Ala Asp Asp Pro Arg Ash Gly Leu Glu Ash Leu 20 25 30

File Ser Lys Ala His His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu ± 5 . ± 40 . ± 45

Aun Lys Ard Cys Pro Asn Thr Gly Glu Leu Cys Asp Val Val Glu Gln 50 55 60

Asn Tys Cys Tyr Thr Tyr Cys Phe Ile Val Val Cys Pro Ile -2:10a 15° 2.7 ·211 ...12> PFT 41113 Conus marmoreus -111231--120211 SITE ·1..22: (1)...(27)Xaa at residues 2 and 26 may be Pro or hydroxy-Pro; Xaa at residu es 6 and 12 may be Glu or gamma-carboxy-Glu; Xaa at residues 17 a nd 19 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho -Tyr or O-phospho-Tyr 4:0(123 Cys Kaa Asn Thr Gly Xaa Leu Cys Asp Val Val Xaa Gln Asn Cys Cys Kia Inr Xia Cys Phe Ile Val Val Cys Xaa Ile 20 - 25104 470 <211 <211 EHIA Temus marmoreus <2211 -<221 - CLS <232 - (312) <400 - 114 ttgcaegg*g aatttegett atatttttet aetgtegtet ttggeateat eeaaaacate 60 accang aty ama ong acy tyc aty aty atc ytt yet yty ong the the 108 Net Lys Leu Thr Cys Met Met Ile Val Ala Val Leu Phe Leu acc yed tigg aca the gid acg get gig cet can too ago gat gia tig Thr Ala Trp Thr Phe Val Thr Ala Val Pro His Ser Ser Asp Val Leu 156 gag sat itt tat etg aag gea ett bae gaa aeg gaa aac eac gaa gee 204 Glu Asr. Leu Tyr Leu Lys Ala Leu His Glu Thr Glu Asn His Glu Ala 45 tot aaa itg aac gtg aga gac gac gag tgc gaa cot cot gga gat ttt Ser Lys Leu Asn Val Arg Asp Asp Glu Cys Glu Pro Pro Gly Asp Phe 252 tgt gge ftt ttt aaa itt ggg eeg eet tge tge agt gge tgg tge tte 300 Cys Cly Phe Phe Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe eto igq tgo goo taaaaotgoo gigatgioti etatioeeet oigtgotaco 352 Leu Trp Cys Ala 80 tggettgate titgattgge gegtgeeett eagtggttat gaaceneeet gateegaete 412 <210: 125 <211: 82 <212: PFT

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<4000: 125

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Trp Thr Fhe Val Thr Ala Val Pro His Ser Ser Asp Val Leu Glu Asn 20 25 30

Leu Tyr Leu Lys Ala Leu His Glu Thr Glu Asn His Glu Ala Ser Lys 95 45

Leu Asn Val Arg Asp Asp Glu Cys Glu Pro Pro Gly Asp Phe Cys Gly !0 55 60

Phe Phe Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Leu Trp 55 70 75 80

Tys Ala

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R2221 (11..(50)

Xia at residues 3 and 5 may be Glu or gamma-carboxy-Glu; Xaa at residues 6, 7, 18 and 19 may be Pro or hydroxy-Pro; Xaa at residue s 24 and 28 may be Trp or bromo-Trp

<400 ← 126

Asp Asp Xaa Cys Xaa Xaa Xaa Gly Asp Phe Cys Gly Phe Phe Lys Ile 1 $$ 10 $$ 15

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ngg aca ito Trp Thr Phe	gto acg (Val Thr 2 20	get gtg ce Ala Val Pr	ct cac too ro His Sei 25	d agd gat go Ser Asp Al	ta ttg gag .a Leu Glu 30	aat 96 Asn
cut tat otg Leu Tyr Leu 35	aag gca Lys Ala I	ott cac ga Leu His Gl 40	lu Thr Glu	n aac cac ga n Asr His Gl 45	u Ala Ser	aaa 144 Lys
ntg aac ytg Leu Asn Val 50	aga gac o Arg Asp A	gad gag tç Asp Glu C ₃ 55	go gaa oot ys Glu Pro	cot gga ga o Pro Gly As 60	at ttt tgt sp Phe Cys	ggc 192 Gly
tot tit aaa Phe The Dys 05	Ile Gly	dag dat to Pro Pro Cy 70	ge tge agt ys Cys 3e:	: ggd tgg tg : Gly Trp Cy 75	go tto oto vs Phe Leu	tgg 240 Trp 80
tgo qua taaa Cys Ala	aactigoo g	tgatgtott	ctactaca	et c		277
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<400≥ 1.3						
Met Lys Leu 1	Thr Cys 5	Val Met II	le Val Ala 10	a Val Leu Ph	ne Leu Thr 15	Ala
Trp Thr Phe	Val Thr . 20	Ala Val Pi	ro His Se 25	r Ser Asp Al	la Leu Glu 30	Asn
Leu Tyr beu 35	Lys Ala	Leu His G		u Asn His Gl 4!	lu Ala Ser 5	Lys
Leu Asn Mal 50	Arg Asp	Asp Glu C 55	ys Glu Pr	o Pro Gly A 60	sp Phe Cys	Gly
Phe Fhe Lys	Ile Gly	Pro Pro C 70	ys Cys Se	r Gly Trp C 75	ys Phe Leu	Trp 80
Cys Ala						
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<222> (1)..(30) 2.33 Xaa at residues 3 and 5 may be Glu or gamma-carboxy-Glu; Xaa at r esidues 6, 7, 18 and 19 may be Propor hydroxy-Pro; Xaa at residue s 24 and 23 may be Trp or bromo-Trp < 100 + 1.19Asp Asp Maa Cys Maa Maa Maa Gly Asp Phe Cys Gly Phe Phe Lys Ile 10 Gly Maa Maa Cys Cys Ser Gly Maa Cys Phe Leu Maa Cys Ala -C2100- 110 -02110 277 -0110- DNA -0215- Comus emaria -002 (De -0221: CDS -02220 - (1) ... (246)-140 C - 1 · 0 are had into any type gtg atg atc gtt get gtg etg ite itg ace gee Met lys leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 10 typ aca the greened get off eet cae tee age aat gea tig gaa aat 96 Trp Thr the Val Thr Ala Val Pro His Ser Ser Asn Ala Leu Glu Asn cht hat ntg aag goa ogt oad gaa atg gaa aad ood gaa god tot aaa 144 Leu Tyr Leu Lys Ala Arg His Glu Met Glu Asn Pro Glu Ala Ser Lys 192 tha had add ana mad qad dat tgd qaa dot dot gga aat tit tigt ggd Led Ash Thr Arg Asp Asp Asp Cys Glu Pro Pro Gly Ash Fhe Cys Gly $a_{1}(t)$ ata waa $a_{1}t$ lagg deg det tige tige agt igge tige titt tite ged 240 Met lie lys lie Gly Pro Pro Cys Cys Ser Gly Trp Cys Fhe Phe Ala 75 tgc dec raaaactgco gigatgtett stocteest c 277 Cys Ala <210: 1:1 <211: 3.1 <212 - ELT <2130 Conus (marta <4(0> 1.1

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Trp Thr Phe 7:1 Thr Ala Mal Pro His Ser Ser Asn Ala Leu Glu Asn 30 25

Leu	Tyr	Leu 35	Lys	Ala	Arg	His	Glu 40	Met	Glu	Asn	Pro	Glu 45	Ala	Ser	Lys	
Leu	Asn Ell	Trir	Arg	Asr	Asp	Asp 55	Cys	Glu	Pro	Pro	Gly 60	Asn	Phe	Суѕ	Gly	
Me t	Ile	Lys	Ile	Gly	Pro 70	Pro	Cys	Cys	Ser	Gly 75	Trp	Cys	Phe	Phe	Ala 80	
Cys	Ala															
· 21 · 21 · 31 · 31	1:- 2:-	132 30 PFT Conu	s coma	aria												
	1,	€,	at r	aci ti	1 19	may	be : be	Glu ∢ Pro ∢	or ga	amma- ydre:	-carb (y-Pr	oxy- c; X	-Glu; [aa a	Xaa it re	a at rê esidue	sidues 24 may
. 4:1	0 -	132														
A3]	Asp	Asp	Суѕ	Xaa 5	Xaa	Xaā	Gly	Asn	Phe 10	Cys	Gly	Met	Ile	Lys 15	Tle	
317	т Жаа	. Жаа	Cys 20	Суз	Ser	Gly	Xaa	Cys 25	Phe	Phe	Ala	Суѕ	Ala 30			
(2) (2)	1 -	133 277 DNA Conu	s iu	licu	s											
F.3.	20 · 21 · 22	CES (1).	. + 24	6)												
7 4-)(. g aaa t Lys	- a+c	ı Inr	tạc Cys 5	ctg Leu	atg Met	ata Ile	a gtt e Val	gct Ala 10	gtg Val	atg Leu	ttc Phe	ttg Leu	ac: Thr 15	ged Ala	45
tç Tr	g ac p Th	a tito r Phe	gto Val 20	e acg L Thr	gct Ala	gtg Val	cot Pro	cac His 25	tcc Ser	ago Ser	aat Asn	gca Ala	ttg Leu 37	380	i i i Light	-6
3.5. 1,63	t ta u Ty	t oto r Leo 35	jāad Lys	g gda s Ala	agt Arg	cac His	gaa G1:	a atq u Met	g gad : Glv	a aad 1 Asr	a Bro	gaa G1u 45	gon Ala	lot Svi	t tau c Lys	144
tt Le	g aa u As 50	n Th	g ag r Ar	a gac g Asp	tac Tyr	gat Asp 55	tg Cy	c gaa s Glu	a cc u Pr	t pat p Pro	gga Gly 60	. aat 7 Asr	ttt n Phe	tgt Cys	ggc s Gly	192
at	g at	a aa	a at	t ggd	g cco	g cc.	t tg	c tg	c ag	t ggd	a tgg	g tgo	s ttt	tt:	a gaa	240

Met Ile Lys Ile Gly Pro Fro Cys Cys Ser Gly Trp Cys Phe Phe Ala 65 70 75 80

the goo talaactgoe gtgatgtett etectoeest c ψ_{ys} Ala

277

-11.10b 134 -111b 82

-0.120 PF.T

-: 13: Conus aulicus

44000 134

Met Lys Leu Thr Cys Leu Met Ile Val Ala Val Leu Phe Leu Thr Ala 1 10 15

Trp Thr File Val Thr Ala Val Pro His Ser Ser Ash Ala Leu Glu Ash 20 25 30

Detu Tyr Let Lys Ala Arg His Glu Met Glu Asn Pro Glu Ala Ser Lys $\frac{1}{40}$

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lys Ala

t210 133 t211 30

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<220 €

<221 - SITE

\$22 · (1 .. (30)

Xai at residue 2 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Kaa at residue 5 may be Glu or gamma-carboxy-Glu; Kaa at residues 6, 7, 13 and 19 may be Pro or hydroxy-Pro; Kaa at residue 24 may be Trp or bromo-Trp

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ang aga gao gao gat tgo gaa dot oot gga aat tit tgit ggo atg ata Thr Arg Asp Asp Cys Glu Pro Pro Gly Ash Phe Cys Gly Met Ile 5 10 15	164
aka Att ggg deg det tge tge agt gge tge ttt tte gee tge gee Lys 11e Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala Cys Ala 10 25 30	212
thadestyre greatyfort stottsssort stagtagray taggoggoog stotagagga	272
todasagetta ogtaogegtg datgogadgt datagotott otalagtgto aedtaaatto	332
autimactog dogtogitti adaadgitogi gadigggaaa adootggogi tadddaadti	390
automostij dagdasatod dostitogdo agdiggogta atagogaaga ggddogdadd	452
gatimocott occasosytt gogosycoty astiggogast gggacgogoc otgtsgoggo	512
goattaagog oggogggtgt ggtggttaog oogoagoogt gasoogotac acttgccage	572
geodtagogs degetestit egetitette etteettiet egedaegtie geoggetitt	632
such caage totaaatogg gggotootti agggtoogat tiaagtgott tac	685
K.111: 137 K.111: 34 K.111: PFT K.111: Conus marmoreus	
<40%-137	
Leu Asn Thr Arg Asp Asp Asp Cys Glu Pro Pro Gly Asn Phe Cys Gly 10 15	
Mot The Lys The Gly Pro Pro Cys Cys Ser Gly Trp Cys Phe Phe Ala 20 25 30	

Cys Ala

c::! 1:8
4:11: 3:
<::1.: 2FT
<21: Conus marmoreus</pre>

*22) \$221> SITE

≤222 · (1)..(30) <223 · Xaa at residue 5 may be Glu or gamma-carboxy-Glu; Xaa at residues 6, 7, 13 and 19 may be Pro or hydroxy-Pro; Xaa at residue 24 may the Trp or bromo-Trp 61)) - 1:3 Asp Asp Asp Dys Kaa Kaa Kaa Gly Asn Phe Cys Gly Met Ile Lys Ile Gly Kaa Maa Cys Cys Ser Gly Kaa Cys Phe Phe Ala Cys Ala 20 25 30 $<310 \times -139$ dill : 1.6 $\{1,2,2,3,\dots\}$ Conus regius $\leq 1 \leq 1 \leq 1 \leq n$ CLS ·1. 1.1 · (1)..(96) <100 - 1.9 tig was mag wigh gas tigs out agt also also get tig tigt goe tigg seg liqu Asn Eln Arg Asp Cys Leu Ser Lys Asn Ala Phé Cys Ala Trp Pro 10 ata ott iga ota etg tge tge agt ggo tgg tge tta tile gte tge atg 96 Tie Leu Bly Pro Leu Cys Cys Ser Gly Trp Cys Leu Tyr Val Cys Met maaaacty o graatgtott otatoocoto 126 \$1.100 140 \$1.110 32 PET C22150-Comus regius K4((d) 140 Leu Asn 3ln Arg Asp Cys Leu Ser Ly; Asn Ala Phe Cys Ala Trp Pro lue Leu (ly Fro Leu Cys Cys Ser Gly Trp Cys Leu Tyr Val Cys Met 25 1.0 :11(: 141 12:11:5 3:5 < 2.1 2.0 $F \vdash \Gamma$ <2135 C.nus regius 322(I 2217 .31°TE <222: [1].. 23) X:a a residues 11 and 22 may be Trp or bromo-Trp; Xaa at residue is 12 and 16 may be Pro or hydroxy-Fro; Xaa at residue 25 may be T γ:, 1:5-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phos pho-Tyr

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Ası Cys Leu Ser Lys Asn Ala Phe Cys Ala Xaa Xaa Ile Leu Gly Xaa
Len dys Cys Ser Gly Xaa Cys Leu Xaa Val Cys Met
<110 = 140
<0.11 + 133
<0.12 + DNA</pre>
enlike Comus radiatus
⊴.:20 €
\pm 2.21 + - \text{CPG}
-232 - (. . . . (103)
(4.)0 - 14.3
 i tij aan aag aaa ggt gat gac tgo ott got gtt aaa aaa aat tgt ggo
Des Asn Lys Lys Gly Asp Asp Cys Leu Ala Val Lys Lys Asn Cys Gly
tit ica ana cit gga ggg cca tgc tgc agt ggc ttg tgc ttt ttc gtc bie Fro bys Leu Gly Gly Pro Cys Cys Ser Gly Leu Cys Phe Phe Val 20 25
                                                                                              133
 tio 100 transcriped grigatignest electrodect
 Cys Ala
          143
 < 2.1
 <211: 34
          E-B-F
 < 2.12.5
         Cinus radiatus
 < 2.1 % -
 <40(~ 143
 Leu Asn Lys Lys Gly Asp Asp Cys Leu Ala Val Lys Lys Asn Cys Gly
 Ithe Fro Lys Leu Gly Gly Pro Cys Cys Ser Gly Leu Cys Phe Phe Val 20 25 30
 Cys Ala
 001100 144
0021100 00
002100 005T
  21.35
          · nus radiatus
   12:5
   221> JITE
          1)..(30)
           Kia at residues 14 and 19 may be Pro or hydroxy-Pro.
   400> 144
```

Gly Asp Asp Cys Leu Ala Val Lys Lys Asn Cys Gly Fhe Xaa Lys Leu

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10
Gly Gly Xaa Cys Cys Ser Gly Leu Cys Phe Phe Val Cys Ala
4210 · 145
4211 · 127
4211 · ENA
# l. - Conus regius
-(<u>53</u>)(6-
man - cos
(111...(96))
-1400 145
                                                                         4.8
this aat hag ago gad too off oof aga gad aga fits tot god titg dog
Let Ash Gln Ser Asp Cys Leu Pro Arg Asp Thr Phe Cys Ala Leu Pro
                                                                         96
the ott aga at a ctg tac tac agt age agg tac tta atc tto tac att
31: Leu Gly Leu Leu Cys Cys Ser Gly Arg Cys Leu Leu Phe Cys Val
                                 25
                                                                        127
madaactgro gigatgicti cicciccect c
1.10 - 146
111 - 31
ti ii - FFT
a. 13 - Conus regius
44.0 116
Leg Asn Gln Ser Asp Cys Leu Pro Arg Asp Thr Phe Cys Ala Leu Pro
in Leu Cly Leu Eeu Cys Cys Ser Gly Arg Cys Leu Leu Phe Cys Val
< 100 147
8, 11 + 28
311. + EAT
Chis Chus regius
4:11
Xua at residues 4 and 12 may be Pro or hydroxy-Pro.
<.31 - 117
Asp Tys Leu Xaa Arg Asp Thr Phe Cys Ala Leu Xaa Gln Leu Gly Leu
Leu 'ys Dys Ser Gly Arg Cys Leu Leu Phe Cys Val
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    ←213 ← Conus aurisiacus
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tgg and tto gto acg get gat gad too aga dat gga otg dag dat ott Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Mo., Gly Leu Lys Asm Leu 20 28 30	96
ttt dog aag goa ogt dat gaa atg aag aad doo gaa god tot aaa ttg Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 39 40 45	144
aac aag aga gat ggg tgc tot aat got ggt gca tit tgt ggc atc cat Asn bys Arg Asp Gly Cys Ser Asn Ala Gly Ala Phe Cys Gly Ile His 50 55 60	192
oda 194 d:o tgo tgo 490 gag att tgo att gtt tgg tgo aca Pro Gly Leu Cys Cys Ser Glu Ile Cys Ile Val Trp Cys Thr 65 75	234
tgagnogta: totgotggta cattitgtgg ottoaacgga ggactotgot gcagcaacct	294
ttgo tatt: ttogtgtgc: taacatatto gtgatgtott otactoccat c	345
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<2215 SITE $< 2220 \cdot (1) ... (27)$ <123: Xaa at residue 14 may be Pro or hydroxy-Pro; Xaa at residue 20 ma</p> y he Glu or gamma-carboxy-Glu; Xaa at residue 25 may be Trp or br one -Tup (4) (i): 15 Asp Gly Cys Ser Asn Ala Gly Ala Phe Cys Gly Ile His Xaa Gly Leu Cyr Cyr Sur Maa Ile Cys Ile Val Maa Cys Thr :210: 151 1211. 41.1 -12121- DNA 21131- Conus purpurascens (21,10)-308 -:2:1: +1:..(243) 4.4 (0) - 151 48 its and ong and the graph and att get get get eth the tree act good Mot bys Leu Thr Cys Val Met lle Val Ala Val Leu Phe Leu Thr Ala tigg aca the into acq got gat gad too aaa aat gga otg gag aat dat 96 Top The Phe Mal Thr Ala Asp Asp Ser Lys Ash Gly Leu Glu Ash His 144 thit typ and the bot gad gas atg mag aso ago gas god tot mam tig Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu 35 45 jib aaa aag jaa gob tgo tat gog oot ggt act tit tgi ggo ata aag Asp bys bys Slu Ala Cys Tyr Ala Pro Gly Thr Phe Cys Gly Ile Lys 192 5) co: ggg ota two tgo agt gag tit tgt oto cog ggc gtc tgc tit ggt Pro Bly Leu Dys Cys Ser Glu Phe Cys Leu Pro Gly Val Cys Phe Gly 240 jit taacticoji gatgietiet actedeetet gigetaeetg gettjatett 293 317 tyatoggogt gtgoccttca otggttatga acccactgat ottacctoto ttgaaggace 353 totgyggtoo aybatobaaa taagogabat oobaatgaaa aaaaaaaaa aaaaaaaaa <210> 15.2 =211> 3.1 2125 PRT 213> Conus purpurascens -400> 152 Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 10

Trr Thr Phe Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu Asp Lys Lys Glu Ala Cys Tyr Ala Pro Gly Thr Phe Cys Gly Ile Lys 50 60Fro Gly Lou Cys Cys Ser Glu Phe Cys Leu Pro Gly Val Cys Phe Gly Giy +.2100 - 153+ 21111+ 21# 2121 FET 2170 Comus purpurascens - 220cc SITE +1,...29) Year at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su lpno-Tyr or O-phospho-Tyr; Xaa at residues 6, 14 and 24 may be Pr o or hydroxy-Pro 4.100 - 105 Maa Ala Mys Xaa Ala Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu lys lys der Kaa Phe Cys Leu Kaa Gly Val Cys Phe Gly 121. 1211 m 104 22.3 PRT Cinus purpumascens (221 · SITE ₹ 2.1.1 · (1..(39))(223) - Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may he Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su lpho-Tyr or O-phospho-Tyr; Kaa at residues 6, 14 and 24 may be Pr o or hydroxy-Pro (4)) - 154 Kaa Ala Cys Xaa Ala Xaa Gly Thr Ala Cys Gly Ile Lys Xaa Gly Leu

Cys Cys Ser Xaa Phe Cys Leu Xaa Gly Val Cys Phe Gly

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<3.111:
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        \{1\}..\{39\}
        Mad at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Kaa at
        residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su
        ipho-Tyr or O-phospho-Tyr; Kaa at residues 6, 14 and 24 may be Pr
        o or hydroxy-Pro
<4111/22 185
Kaa Ala Cys Mda Ala Xaa Gly Thr Pho Cys Gly Ala Lys Xaa Gly Leu \pm 10 \pm 15
Cys Cys Ser Maa Phe Cys Leu Xaa Gly Val Cys Phe Gly
#.1111
#.11111
#.11121
        154
        EFT
Conus purpurascens
< 2\% 100
        : ITE
< 21 12 2
        1 . . . _ 9
        Maa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at
<21.00
        residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-10do-Tyr, O-su
        irho-Tyr or O-phospho-Tyr; Maa at residues 6, 14 and 24 may be Pr
        of or hydroxy-Pro
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        Comus magus
< 21 31 -
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<331.
        IDS
<22.2. (1)..(252)
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1 5 15
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igy aca the jie acg get gat gad tee aga tat gga tig aag aat ett

Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asn Leu

ttt dag aag goa agt dat gaa atg aag aac oot gaa god tot aaa ttg

20

96

144

30

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Phe	Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Fro	Glu	Ala 45	Ser	Lys	Leu	
								gct Ala								192
								tgc Cys								240
-		tot Jer		taad	cagto	gtg (cgtt	ggtta	ag to	gtoti	tete	c ta	cact	С		289
+0310 +0311 +0312 +0313	. · · · · · · · · · · · · · · · · · · ·	lb3 84 PRT Conus	s ma∢	gus												
::)()) · 1	153														
Mes 1	Lys	Leu	Thr	Cys 5	Val	Met	Ile	Val	Ala 10	Val	Leu	Phe	Leu	Thr 15	Thr	
Тър	Than	Phe	Vā1 20	Thr	Ala	Asp	Asp	Ser 25	Arg	Tyr	Gly	Leu	Lys 30	Asn	Leu	
Phe	Iro	Lys je.	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	
	iys Fo	Arg	Asp	Gly	Cys	Tyr 55	Asn	Ala	Gly	Thr	Phe 60	Cys	Gly	Ile	Arg	
Pro	Hy	Leu	Cys	Cys	Ser 70	Glu	Phe	Cys	Phe	Leu 75	Trp	Суз	Ile	Thr	Phe 80	
Tot".	ž.sp	Sor	Gly													
1010 1011 1012 1012 1012 1012 1012	3 F C	FITE	s maç	gus												

<400 15:

(1:...(52)

<2222:--223:-

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Xad at residue 25 may be Trp or bromo-Trp

Xad at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xad at residue 14 may be Pro or hydroxy-Pro; Xad at residue 20 may be Glu or gamma-carboxy-Glu;

10 15 Cys Cys Ser Xaa Phe Cys Phe Leu Xaa Cys Ile Thr Phe Val Asp Ser 2011 - 100 <011 - 273 <012 - DNA 1.113 · Conus magus 40001 - CDS -...... (1)...(249) 4.4 16 - 160 α^* g aga ctg abg tgc gtg atg atc gtt gct gtg ctg ttc ttg acc abc Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Thr 43 tog wearing give acgriget gat gad too aga tat gga tig aug aat oft Trp Thr Fne Val Thr Ala Asp Asp Ser Arg Tyr Gly Lei Lys Asn Leu the cog mag goalegt cat gaa atglaag aas cot gaa gos tot aaa ttg $\rm Phe$ fro Lys Ala Arg His Glu Met Lys Ash Pro Glu Ala Ser Lys Leu 144 agan aga aga gat gaa tgo tat oot oot ggt aca ttt tgt ggd atd aga 192 Ash Lys Ang Asp Glu Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys con aga cut tae tgc age geg ata tgc tra teg tit gtc tae ata tea Pro Gly leu Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser 240 273 this dat its treatigates citetected ecte Phe Asp The <2111: 85
<2111: PFT</pre> <2130 Conus magus <4000 161 Met Lys lou Thr Cys Val Met Ile Val Ala Val Leu Phe Lou Thr Thr Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Ash Leu Phe Pro Lys Ala Arg His Glu Met Lys Ash Pro Glu Ala Ser Lys Leu Ash Lys Arg Asp Glu Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys

Pro Gly Leu Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser

7.0

75

80

Phe Asp Phe

< 210 - 162 :211 · 3. ::12 · PRT

Conus magus

-.22.0 -

-1.1.12 -SITE

11...(32)

Maa at residue 2 may be Glu or gamma-carboxy-Glu; Xaa at residue 🖟 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 5, 6and 14 may be Fro or hydro xy-Pro

-14mm - 16<u>-</u>

 Λ_{eff} Maa Mys Maa Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu

tys Cys Ger Ala Ile Cys Leu Ser Phe Val Cys Ile Ser Phe Asp Phe 25

Hill 144 Hill DUA

MARK Cortus magus

-1111 (1) -1111 1.- CDS

Finally (1 ...(252)

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 ϵ a ϵ aaa ϵ g acg tgc gtg atg atc gtt gct gta ctg ttc ttg acc gcc 4.8 Mot Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala

96 tur healthe give acg get gat gae toe aga tat gga etg aag gat etg Trp Thr The Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asp Leu

the dog wag yaa ogt dat gaa atg aag aad doo gaa god tot aaa ttg 144 Pha Pro Lys Glu Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu

 $_{
m Aac}$ dag ada gas ged tgd tat aat get ggt tea tit tgt gge ate eat $_{
m Aan}$ Gln Arg Glu Ala Cys Tyr Asn Ala Gly Ser Phe Cys Gly Ile His

sea aga one igo igo ago gag tit igo air bit igg igo ata aca iti Dro Gly Leu Cys Cys Ser Glu Phe Cys lle Leu Trp Cys Ile Thr Phe 240

jtt vat tet gge taactgtgtg ogttggttga tgtettetee teecate 289 Val Asp Ser Gly

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m Maa}$ Ala Mys Maa Asn Ala Gly Ser Phe Cys Gly Lie His Maa Gly Leu $_{
m 1}$ 5 10 15 Cys Cys Ger Xaa Phe Cys Ile Leu Xaa Cys Ile Thr Phe Val Asp Ger C nus magus <22. <221 CDS

Atg aaa ctg acg tgc atg atg atc gtt gct gta ctg ttc ttg acc gcc

<221 - (!)..(249)</pre>

-400× 166

100
(A. 10- V
4
1.5

			71		
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	gtc acg gct Val Thr Ala 20				
	gaa ogt dat Glu Arg His			-	2
	gaa gee tge Glu Ala Cys				
	tgc tgc agc Cys Cys Ser 70				
tit gat tig Phe Asp Lou	attgatgtot t	ictestaces to			271
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Trp Thr Fhe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asp Leu

Phe Fro Lys Glu Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 3! 40 45

Ash Gln Arg Glu Ala Cys Tyr Ash Ala Gly Thr Phe Cys Gly Ile Lys 50 60

Pro Gly Leu Cys Cys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser 65 70 75 80

Phe Asp Leu

- <210> 168 <2112 32 <212> PRT +213> Conus magus
- <2220>
- <221> SITE
- -222% (1)..(32)
- <223> Xaa at residue 1 may be Glu or gamma-carboxy-Glu; Xaa at residue

4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 14 may be Pro or hydroxy-Pro

~400> 163

Xaa Ala Cys Xaa Asn Ala Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu 10 15

Gys Gys Ser Ala Ile Cys Leu Ser Phe Val Cys Ile Ser Phe Asp Fhe 20 25 30

3210 + 169
3211 + 27.

RUIZ - DNA

1113 · Conus ermineus

-0121 - CDC

 $\pm 1222 \pm (1 ... (243))$

-:400 · 16 ·

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1 5 10 15

tgd ara the gib and got gat gab ted and ant gga etg gag ant cat 96
Trp Thr Pre Val Thr Ala Asp Asp Ser Lys Ash Gly Leu Glu Ash His

ttt tyg ang gda ogt gad gaa atg aag aad ogd gaa gdd tot aaa ttg — 144 Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu — 35

gac waa aag gaa goo tgo tat oog oot ggt act tit tgi ggo ata aag — 192 Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys fi) — 35

coc agg chaitge tg: agt gag ttg tgt tta deg ged gtd tgd ggt 240 Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly 65 70 75 80

ggt täadt googt gatgtottot octoocoto 272 Gly

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<2113 81 <2123 PET

<213% Conus Ormineus

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Phe Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu 35 40 45

Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly Gly <d10 · 171</pre> 2011/-2012/-2013/-PFTConus ermineus 4 t - 1 - 2 t - 1 -:221 SITE 12227 (1:.....9) Man at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-1-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su Irno-Tyr or O-phospho-Tyr; Xaa at residues 5, 6, 14 and 24 may be Fro or hydroxy-Pro 14400 171 Maa Ala Cys Maa Xaa Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu cys Cys Ser Maa Leu Cys Leu Xaa Ala Val Cys Val Gly 12160 17. 111: 7.5 INA Comus purpurascens 122(0) CRUIT: CRG (2.12) (1...143)<400: 172</pre> itg aaa ong ang tgo atg atg atc gtt got gtg otg tto ttg act god Met lys Lou Thr Cys Met Met lle Val Ala Val Leu Phe Leu Thr Ala 48 96 tgg ada the die adg got gat gae too aaa aat gga otg gag aat dat Trp Thr Flee Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His titi igg ang dia ogt gad gad atg aag aad ogd gaa god tot aam til Phe Trp Lys Ala Arg Asp Glu Met Lys Ash Arg Glu Ala Ser Lys Læd : 14 192 gae waa ang jia goo tgo tat dog bot ggt act tit tgt ggo ata aag Asp Lys G: a Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly He Lys see agg eta tie toe agt gag tig tot tia eeg gee gie ige gie got Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly 240

65 Gly

80

ggt taactgoogt gatgtottot cotoocto

70

272

<2105 173 <2111 31 <2120 PFT

<2130 Conus purpurascens

<400> 173

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Phe Tip Lys Ala Arg Asp Glu Met Lys Asn Arg Glu Ala Ser Lys Leu

Asr Lys Lys 3lu Ala Cys Tyr Fro Pro Gly Thr Phe Cys Gly Ile Lys 50

Prc Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly 7.5 70

G1y

1210> 174 23 :211> PET

1212: 1213: Canus purpurascens

4.2.211 SITE

(1)..(29)< 2.12

Maa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at 6223 residue 4 may be Tyr, 125-I-Tyr, mone-iodo-Tyr, di-iodo-Tyr, O-su lpho-Tyr or C-phospho-Tyr; Xaa at residues 14 and 24 may be Pro o r nydroxy-Pro

44)(2 174

Xaa Ala Cys Xaa Xaa Xaa Gly Thr Phe Cus Gly Ile Lys Xaa Gly Leu

Cys Cys Ser Xaa Leu Cys Leu Xaa Ala Val Cys Val Gly

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K2115 2+6

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lap tag	aca Thr	ttc Phe	gtc Val 2)	ang Thr	gct Ala	gat Asp	gac Asp	tod Ser 25	aga Arg	tat Tyr	gga Gly	ttg Leu	aag Lys 30	aat Asn	ctt Leu	96
tit Phe	crфg Farc	aag Lys If	gca Ala	ogt Arg	cat His	gaa Glu	atg Met 40	aag Lys	aac Asn	ccc Pro	gaa Glu	gcc Ala 45	tot Ser	aaa Lys	ttg Leu	144
аас Авт.	aäg 1573 10	aga Arg	gaa Glu	ggg Gly	tgc Cys	tot Ser 58	agt Ser	gat Gly	ggt Gly	aca Thr	ttt Phe 60	tgt Cys	ggc Gly	atc Ile	cat His	192
შდც გნი გჭ	cida (:ly	ata Deu	tgc Cys	tgo Cys	agc Ser 7)	gag Glu	ttt Phe	tqc Cys	ttt Phe	ctt Leu 75	tgg Trp	tạc Cys	ata Ile	aca Thr	ttt Phe 80	240
	dat Asp	tgat	igtot	sta t	sasta	aacat	LC.									266
<210 <210 <210 <210	1, : 2 : -	176 82 PET Cortus	5 .ST.	riātī	1.3											
<400	0 je	175														
Met 1	٤٪دٍ	Lesia	Thr	Cys 5	Val	Met	Il∈	Val	Ala 10	Val	Leu	Pr.e	Leu	Thr 15	Thr	
1.tb	'[].r	Fine	7al 20	Thr	Ala	Asp	Asp	3r	Arg	Tyr	Gly	Leu	17s 30	Asn	Leu	
Pīne⊦	Pro	Lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	

Asn Lys Arg 31s 31y Cys Ser Ser Gly Gly Thr Phe Cys Gly 1se Ais 50 - 60 $^{\circ}$

Pro Gly Leu Cys Cys Ser Glu Phe Cys Phe Leu Trp Cys 100 Thr Phe 65 70 75 60

lle Asp

Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Thr

10

Enter State of the Control of the Co

Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Tyr Gly Leu Lys Asn Leu 25

Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu

Asn Lys Arg Asp Gly Cys Ser Ser Gly Gly Thr Phe Cys Gly Ile His

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Ile Asp

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<2111 31 <2121 PF.T

s.2.2 DI -

<.2310 · SITE

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Xaa at residue 20 may be Glu or gamma-carboxy-Glu; Xaa at residue <.2.2.31+ 14 may be Pro or hydroxy-Pro; Xaa at residue 25 may be Trp or br omo-Trp

₹4000: 130

Asp Cly Cys Ser Ser Gly Gly Thr Phe Cys Gly Ile His Xaa Gly Leu

Cys Cys Ser Maa Phe Cys Phe Lêu Maa Cys Ilo Thr Phe Ile Asp

<2100 - 131

<2211: SITE

<23320-(1 ... 31)

Xaa at residues 6 and 14 may be Pro or hydroxy-Pro; Yaa at residu e limay be Glu or gamma-carboxy-Glu

44000 18I

Der Dys Cys The Ser Xaa Gly Thr Fhe Cys Gly Ile Lys Xau Gly Leu : 10 10

Cys Cys Ser Val Arg Cys Phe Ser Leu Phe Cys Ile Ser Phe Xaa

<210 - 182

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tgg 4 Trp T	da ti hr Ph	ic gto ne Val 20	e acg Thr	gct Ala	gat Asp	gac Asp	tcc Ser 25	aga Arg	aat Asn	gga Gly	ctg Leu	aag Lys 30	aat Asn	ctt Leu	96
tit : Phe P		s Ala													144
aác i Asn L	ys Ai	a tit g T/r	gly	tgc Cys	tct Ser 55	aat Asn	gct Ala	ggt Gly	ğca Ala	ttt Phe 60	tgt Cys	ggc Gly	atc Ile	cat His	192
cca q Pro G 65															234
tgag.	gctit	tatt	ctgg	ta ca	attt	gta	g att	caa	egga	ggad	ctct	gat (acado	caacct	294
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<210: <211: <212: <213:	PF.T		tus												
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			Cys 5	Met	Met	Ile	Val	Ala 10	Val	Leu	Ph.e	Leu	Thr 15	Ala	
Trp Tl	hr Eh		Ε,					10					1.5		
Trp Th		e Val 20	5 Thr	Ala	Asp	Asp	Ser 25	10 Arg	Asn	Gly	L∈u	Lys 30	15 Asn	Leu	
	ro Ly 35 ys Ar	e Val 20 s Ala	5 Thr Arg	Ala His	Asp Glu	Asp Met 40	Ser 25 Lys	10 Arg Asn	Asn Pro	Glu	Leu Ala 45	Lys 30 Ser	18 Asn Lys	Leu Leu	
Pne Fi	ro Ly 35 ys Ar O	e Val 20 s Ala g Tyr	5 Thr Arg	Ala His Cys	Asp Glu Ser 55	Asp Met 40 Asn	Ser 25 Lys Ala	10 Arg Asn Gly	Asn Pro Ala	Glu Fhe	Leu Ala 45 Cys	Lys 30 Ser Gly	18 Asn Lys	Leu Leu	

r, O-sulpho-Tyr or O-phospho-Tyr; Kaa at residue 14 may be Pro or hydroxy-Pro; Kaa at residue 20 may be Glu or gamma-carboxy-Glu;

96

144

192

234

345

Maa at residue 1 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Ty

Maa at residue 25 may be Trp or bromo-Trp

 $\mathbb{K}_{\mathrm{def}}$ Cly Cys Ser Asn Ala Gly Ala Phe Cys Gly Ile His Kaa Gly Leu

reagrapetat totactggta cattitigting officeaechia gractotict geogrammen

Met Lys Lau Thr Cys Met Met Ile Val A's Val Leu Phe Leu Thr Ala

trigottatit togtgtgott aabatttogt gatgtottot ctattoccot c

Cys Cys Ser Xaa Leb Cys Leu Val Xaa Cys Thr

185

110- 185

110- 345

110- 5MA

1130 Corus catus

121- CPS

1221- CPS

12

-C12.5→

1021 · SITE + 1022 · (1) · . (27)

-1300 - 184

E. 10 · 186 1.11 · 79 1.12 · PRT

136

dill3 - Conus catus

Tip Thi		Val' 20	Thr .	Ala .	Asp	Asp	Ser 25	Arg	Tyr	Gly	Leu	Lys 30	Asn	Leu	
Fræ Fro) Lys 31	Ala .	Arg	His	Glu	Me∙t 4 (:	Lys	Asn	Pro	Glu	Ala 45	Ser	Lys	Leu	
Ash Lys	s Arg	Tyr	Gly	Cys	Ser 55	Asn	Ala	Gly	Alā	Phe 60	Cys	Gly	Ile	His	
F: 7 (32)	z Lesa	Cys		Ser 70	Glu	Leu	Суѕ	Leu	Gly 75	Trp	Cys	Thr			
· 210 · · · 11 · · · · 12 · · · · 13 · ·		; cat	us												
:20 · · · .:21 · · · .:22 · · · .:23 · ·	- (.)	at re -sulp	sidu ho-T Pro;	'yr c Xaa	r ()- . at	pho: res.	spho idu⊖	-Tyr 20 i	; xa nay l	a at be G	res lu o	lau≓.	14 1	r, di-iodo may be Pro carboxy-G	OT
- 4 (0)	187														
Mara 31	y Cys	£∋r	Asn 5	Ala	Gly	Ala	Phe	Cys 1)	Gly	Ile	His	Хаа	Gly 15	Leu	
∴ys °7γ	s Ser	Xaa 2D	Leu	Cys	Leu	Gly	Xaa 25	Cys	Thr						
10	188 286 CNA Conu	s dis	stans	3											
·21 ·21 · ·32 ·	C1 £ .	. (24)	6)												
:400 :tg aa :Mrt Ly i		acg Thr	tat Cys 5	ctg Leu	atg Met	ato Ile	e gtt Val	get Ala 10	gtç Val	; ctg Leu	rtto Phe	: ttg : Leu	acc Thr	ges Ala	48
: :g = 10 [rp]]	a ttc r Ine	gtc Val 20	acg Thr	got Ala	gat Asp	gac Asp	tac Ser 25	aga Arç	ı aat J Asr	gga Gly	ı ttç / Lei	gag i Glu 30	ı aat ı Asr	ctc Leu	96
ist da Jez Pi	ig lag cc Lys 35	gca Ala	cat Pro	ca¢ His	gaa Glu	ati Met 40	g aaq Eys	ı Add F.Sr	e e e e e Pro	u jaa o Glu	a go a Ala 45	s tot a Ser	: aaa : Ly:	a tog S Ser	144
:ac a Asn L 5	ys Arg	ı tat ; Tyr	gag Glu	tigo Cys	tat Tyr 55	c. Let	ct* u Lei	~ dta i Val	a ja L Hi:	t tt! s Phe 60	t tg: e Cy:	s Gly	c ato y Ilo	c aac e Asn	192

gga gga etc tgc tgc agc aac ett tgc tta ttt ttc gtg tgc tta aca 240 Gly Gly Leu Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr 266 this tog that great test codes at contract the state of t Phe Ser -210 - 183 211 - 32 -212 - PRT 213 - Conus distans -400 → 189 Met Lys Leu Thr Cys Leu Met Ile Val Ala Val Leu Phe Leu Thr Ala Trp Thr Fne Val Thr Ala Asp Asp Ser Arg Asn Gly Leu Glu Asn Leu 25 Jer Pro Lys Ala Pro His Glu Met Lys Asn Pro Glu Ala Ser Lys Ser Asn Lys Arg Tyr Glu Cys Tyr Leu Leu Val His Phe Cys Gly Ile Asn 50 60Hy Bly Leu Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr Phe Ser 190 3.1 FFT Conus distans 41. 2C: SITE *. 211: $(1 \cdot ... \cdot 31)$ Xaa at residues 1 and 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, diiodo-Tyr, C-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 2 may be Glu or gamma-carboxy-Glu 1:0 - 190 Kia Kaa Cys Maa Leu Leu Val His Phe Cys Gly Ile Asn Gly Gly Leu 1 5 15 Cys Cys fer Asn Leu Cys Leu Phe Phe Val Cys Leu Thr Phe Ser 25 20 <21 0> 191 <21:> 113

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-1.121 - CIS
-::::2 + (1)..(33)
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Light Ser Lys Arg Asp Cys Leu Pro Asp Tyr Thr Ile Cys Ala Phe Asn
aty agt etg tyd tgd agd gad aag tgd atg otd gtd tgd otg bog
                                                                                93
Mot Gly Leu Cys Cys Ser Asp Lys Cys Met Leu Val Cys Leu Pro
                                                                              113
ngaratotta taataaaata
41.10 - 192
41.11 - 31
H.lux PF.T
H.lux Comus regius
August 192
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PFT
4.113
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11111
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        yr or \rightarrow-phospho-Tyr
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aat 159 Ann 75	g tit L Phe	cta Leu 20	tgc Cys	tgc Cys	agt Ser	ggc Gly	aac Asn 25	tgc Cys	att L∈u	ctc Leu	atc Ile	tąc Cys 30	gtg Val	acg Pro	96
tgatift	atte 1	cact	adad.	tc											116
·10 · ·11 · ·12 · ·13 · ·	3.2; F.F.T	s rė	gius												
- 40¢ ·	195														
leu Ar I	n Lys	Arı	Ile 5	Ile	C7.s	Phe	Pro	Asp 10	Tyr	Met	Phe	Cys	Gly 15	Val	
Ash Mi	l lhe	L∉u 2€	Cys	Суз	Ser	Gly	Asn 25	Cys	Leu	Leu	Ile	Cys 30	Val	Pro	
*.1 211 · 1 1 ·	29 FFT	s re	gius												
21 - 222 22 -	SITE (I). Maa # " yr C	. He at r may	esio be I	'nr,	125-	d 28 I-Ty	3 may 7r, m	té ono-	Pro iode	or h -Tyr	ydro , di	xy-P i.od	ro; o-Ty	Xaa a r, O-	t residu sulpho-T
- 4011															
ile il :	le Oys	s Gly	7 Xaa 5	a Asp	х хаа	n Met	Ph∈	e Cys 10	s Gly	y Val	. Asr	ı Val	. Ph∈ 15	e Leu	
Nys M	ys Jei	a Glij 20	y Asi	n Cys	s Leu	ı Lei	ı Il∈ 25	e Cys	s Val	l Xaa	à				
· :: 1 · · · · · · · · · · · · · · · · ·	6.35. AMG	us II.	lori	amar.	is										
	CDS	(.:	28)												
	197 aa ct ys Le	ga: u Tn	g tğ r Cy 5	c at s Me	g at t Ne	g at t Il	c gt e Va	t gc 1 Al 10	a /a	g ct l Le	g tt u Ph	c tt e Le	g ac u Th 15	c gcc r Ala	48
igo a Trp T	ca tt hr Ph	o di e Va 20	1 Th	g gc r Al	t qt a ''a	g cc l Pr	st ca o Hi 25	s 5e	c ag r Se	c aa r As	t gc n Al	g tt a Le 30	u Gi	g aat u Asr	96

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ttg aac L∈u Asr £0	aag Lys	agg Arg	tgc Cys	tat Tyr	gat Asp 55	ggt Gly	Gly ggg	aca Thr	ggt Gly	tgt Cys 60	gac Asp	tct Ser	gga Gly	aac Asn	192
caa tgo Gln Cys	tgo Cys	agt Ser	ggc Gly	tgg Trp 70	tigc Cys	att Ile	ttc Phe	gcc Ala	tgc Cys 75	ct.c Leu	taaa	aacto	gts		238
qt gat gt	ctt	at sa	taaa	ct c											259
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Let Tyn	r Leu Es	Lys	Ala	His	His	Glu 40	Met	Asn	Asr.	Pro	Glu 45	Asp	Ser	Glu	
Leu Asi	n Lys	Arg	Cys	Tyr	Asp 55	Gly	Gly	Thr	Gly	Cys 60	Asp	Ser	Gly	Asn	
Gin Ty:	s Cys	Ser	Gly	Trp 70	Cys	Ile	Phe	Ala	Cys 75	Leu					
<. 10 · <. 11 · <. 12 · <. 13		ıs gl	cria	mari	S										
<.00 <.01 * <.02 + <.023	r, C	.(24	esid pho-	ue 2 Tyr	may or O	be -pho	Tyr, spho	125 -Tyr	-I-T ; Xa	yr, a at	mono res	-iod idue	o-Ty 18	r, di-ioc may be T:	do-Ty rp or
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Cys Xa 1		o Cly	- Gly 5	/ Thr	Gly	. CAs	a Asp	Ser 10	Gly	Asn	Gln	Cys	Cys 15	Ser	
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Congrado Trpo Tr	a tic ir Fhe	gtc e Val 20	adg Thr	gct Ala	gtg Val	cct Pro	cac His ∴5	taa Ser	agc Ser	aat Asri	gcg Ala	ttg Leu 30	gag Glu	aat Asn	96
ont to Deal Ty	at org or last	g aag i Lys	gda Ala	cat His	cat His	gaa Glu 40	atg Met	aac Asn	aac Asn	ada Pro	gag Glu 45	gac Asp	tat Ser	gaa Glu	144
ting as Seu As G	n Lys	add Ard	tac Cys	tat Tyr	gat Asp 55	ggt Gly	gly Gly	aca Thr	ggt Gly	tgt Cys 60	gac Asp	tot Ser	gga Gly	aac Asn	192
Gim Cy	rs 'ys	aqt Ser	9()c Э()y	tgg Trp 70	tgc Cys	att Ile	ttc Phe	gtc Val	tgc Cys 75	ota Leu	taaa	aacto	gee		238
j g i d	it it:	ctat	ophat	t a											258
(2.10 + (2.11) + (2.11) + (2.13) + (2.13) +	m¥3 EYE/III	ıs da.	11 i.												
5400															
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Letu Ti	yr Lei -5	ı Lys	A.a	His	His	Glu 40	Met	Asn	Asn	Pro	Glu 45	Asp	Зеr	Glu	
lett Ar S		s Arg	Cys	Tyr	Asp 55	Gly	Gly	Thr	Gly	Суз 60	Asp	Set	Gly	Asn	
ain h	78 - 178	s Ser	Gly	Trp 7)	Cys	Ile	Fhe	Val	Сун 75	Leu					
<.11) · <.111 · <.211 · <.212 · <.213 ·	202 24 PRT John	ıs da	11i												

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<4010	202														
Cys Xa 1	aa Asp	Gly	Gly 5	Thr	Gly	Cys	Asp	Ser 10	Gly	Asn	Gln	Cys	Cys 15	Ser	
G.у Ха	aa Cys	11e 20	Phe	Val	Cys	Leu									
<. 1.11 <. 1.11 <. 1.5	25.3	s per	nnac∈	eus											
<	(I)3 1 .	. 228	3)												
(40)) - atq 48 Med. by 1	aa stoo	acg Thr	t gc Cys 5	gtg Val	atg Met	atc Ile	gtt Val	got Ala 10	gtg Val	ctg Leu	ttc Phe	ttg Leu	acc Thr 15	gee Ala	48
tog ac Trp Pl	ca sto or Val	gt: Val 20	acg Thr	gct Ala	gtg Val	cct Pro	cac His 25	tac Ser	aac Asn	aag Lys	cgg Arg	ting Leu 3)	gcg Ala	aat Asn	96
ont (a Leu Ti	it itg yr Leu si	aag lays	gca Ala	egt Arg	cac His	gaa Glu 40	atg Met	aaa Lys	aac Asn	ccc Pro	gaa Glu 45	gec Ala	tot Ser	aat Asn	144
gtj go Vil Ai	sp Lys	agg Arg	tge Cys	ttt Phe	gag Glu 55	agt Ser	tgg Trp	gta Val	get Ala	tgt Cys 60	gag Glu	tot Ser	cca Pro	aaa Lys	192
ego Yeal y cla∵c	As SAs id Lifo	agt Ser	cac Hís	jtg Val 70	tgc Cys	ctt Leu	ttc Phe	gtc Val	tgc Cys 75	acc Thr	tgaa	aasto	gcc		238
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<21) · <211 · <212 · <212 · <213 ·	76 PRT	s pe	nnac	eus											
€400×	201														
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Trp T	hr Vai	Val 20	Thr	Ala	Val	Pro	His 25	Ser	Asn	Lys	Arg	Leu 30	Ala	Asn	

Leu Tyr Leu Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Asn $4 \cdot)$ Val Asp Lys Arg Cys Phe Glu Ser Trp Val Ala Cys Glu Ser Pro Lys 55 60 Arg Cys Cys Ser His Val Cys Leu Phe Val Cys Thr 70 75 0210 · 205 -0311 · 24 -0312 · PRT <213 - Conus pennaceus</p> didle SITE $(1.1.1.1 \cdot 1)...(24)$ 0.0030 + 0.004a at residues 3 and 3 may be Glu or gamma-carboxy-Glu; Xaa at r esidue 5 may be Trp or brond-Trp; Kaa at residue 11 may be Pro o r nydroxy-Pro State of the state ctyw the Maa Ser Maa Val Ala Cys Maa Ser Maa Lys Arg Cys Cys Ser His Val Cys Leu Phe Val Cys Thr 4.10 - 206 0111 - 193 2112 - DDA Genus distans CDS ·...17. 11...(228) - Hug - 20€ and has sty and total attentions get given the sty acq good Mer bys Leu Thr Cys Met Leu Ile Ile Ala Val Leu Phe Leu Thr Ala thin haa lete titt ada aat geg ayt tal ged aga agt aag dag aag dat 96 Cys Gin Leu Ser Thr Asn Ala Ser Tyr Ala Arg Ser Lys Gin Lys His out out outglagg tog act gas and mas too mag tig acc dag out tgo Arg Val Leu Arg Ser Thr Asp Lys Arm Ser Lys Leu Thr Gln Arg Cys 14.4ant gha got caa gaa cat top apt ona aat oot gad top top agt gag 192 Asn G.u Ala Gln Glı His Cys Thr G.r Asn Pro Asp Cys Cys Ser Glü tet tee aat aag tit gie gee aga tee tig tea gae tgatetgate Ser Cys Asn Lys Phe Val Gly Arg Cys Let Ser Asp 233

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4.11 7E
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ROLL Conus distans
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Arg Val Leu Arg Ser Thr Asp Lys Asn Ser Lys Leu Thr Gln Arg Cys

 ${\rm Agn}$ 3lu Ala Gln Glu His Cys Thr Gln Asn Pro Asp Cys Cys Ser Glu $^{6.0}$

This Mys Ash Lys Phe Val Gly Arg Cys Leu Ser Asp 70

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+010 + 008
+011 + 09
+012 + PRT
+013 + Comus distans
```

FITE

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40. . 08

 $^{\circ}\text{Vs}$ Asn Xaa Ala Gln Xaa His Cys Thr Gln Asn Xaa Asp Cys Cys Ser 10 15

Maa Wer Tys Asn Lys Phe Val Gly Arg Cys Leu Ser Asp 20

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_69
- 793
- 31.
- 211
          \rightarrow 1_{\Delta}
          Jonus ammiralis
 22: · :DS
 22. (1 .. (228)
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ctt Leu	tat Tyr	otg Leu 35	aag Lys	gca Ala	cat His	cat His	gaa Glu 40	atg Met	aac Asn	aac Asn	ccc Pro	gaa Glu 45	gac Asp	tot Ser	gaa Glu	144	
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caa Gin K5	t do Cas	tgc Cys	agt Ser	ggs Gly	tgg Trp 70	tgc Cys	att Ile	ttc Phe	ctc Leu	tgc Cys 75	atc Leu	taaa	aacto	ges		238	
ąt.ga	at it	ct1	ctst	taas	et e											25 9	
	1	210 76 PRT Conu	s am	mira.	lis												
- 40	0 -	210															
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Leu	Tyr	Leu 35	Lys	Ala	His	His	Glu 40	Met	Asn	Asn	Pro	Glu 45	Asp	Ser	Glu		
ùē·u	Asn 13	. Lys	Arg	Cys	Tyr	Asp 55	Gly	Gly	Thr	Ser	Cys 60	Asn	Thr	Gly	Asn		
31n 55		s Cys	: Ser	Gly	Trp	Cys	Ile	Phe	Leu	Cys 75	Leu						
<21 <21		24 EFT	ıs am	mıra	lis												
200	1 .	Хан 1°, (24 at r	esic pho-	lue 2 Tyr	emay or C	, be)-pho	Tyr, ospho	125 -Tyr	-I-T	'yr, ia at	monc res	o−1 si sidu∈	doring e lê	vr, mi- may be	iodo-Ty Trp or	,
< 40)(211															
Cys i	з Хал	. Ası	o Gly	y Gly 5	/ Thi	s Ser	e Cys	s Ası	. Thi	r Gly	y Ası	n Glr	n Cys	s Cys 15	s Ser		

是 10 mm 12 12 mm 12 mm







Gly Maa Cys Ile Fhe Leu Cys Leu 20

#2100 218 #2116 2*6 #2120 DNA

0213 Conus textile

-;2300°-

-CLL11- CDS

<:400 + 212</pre>

pgrattaget aaaacatcac caag atg aaa ctg acg tgc atg atg atc gtt Met Lys Leu Thr Cys Met Met Ile Val 1 5

gut itg ong the tig acc god tgg aca the gib acg got gog cot cac 99 Ala Val Leu Phe Leu Thr Ala Trp Thr Phe Val Thr Ala Ala Pro His

51

147

Ser Per Ash Ala Leu Glu Ash Leu Tyr Leu Lys Ala His His Glu Met

Ash Ash Pro Glu Ala Ser Glu Leu Ash Lys Arg Cys Tyr Asp Ser Gly

Hera agt tigt aac act gga aac caa tigc tigc agt ggc tigg tigc att tite 243 Thr Cer Cys Ash Thr Sly Ash Gln Cys Cys Ser Gly Trp Cys Ile Phe 65 70

ind tot tid etc taaaactade gigaigiett diceleeest e 286 Val Ger Cys Leu

(210 - 213 (211 - 77 (212 - PRT

(213 · Conus textile

(400) 213

Met Dys Leu Thr Cys Met Met Ile Val Ala Val Leu Phe Leu Thr Ale 1 5 10

Irp Thr Fne Val Thr Ala Ala Pro His Ser Ser Asn Ala Lou Glu Asn
20 25 30

Leu Tyr Leu Lys Ala His His Glu Met Asn Asn Pro Glu Ala Ser Glu 35 40 45

Leu Asr. Lys Arg Cys Tyr Asp Ser Gly Thr Ser Cys Asn Thr Gly Asn 50 60

Sin Cys Cys Ser Gly Trp Cys Ile Phe Val Ser Cys Leu 65 70 75

<4(0> 216

<7.100 still: still: still:	N14 N5 PPT Conus t	extile	3											
<pre><d:000 <d:010 <d:0200 <d:0000< pre=""></d:0000<></d:0200 </d:010 </d:000 </pre>	SITE (1)(? Maa at r, O-su bromo-	residu 1ph.o-1	ie 2 Tyr c	may or O-	ke T ∙phos	'yr, spho-	125- Tyr;	I-Ty Xaa	/r, π a at	ono- resi	iodc due)-Tyr 18 n	r, di- nay be	iodo-Ty Trp or
<4 1.0 ·	214													
Cys Ka i	a Asp Sc	er Gly	Thr	Ser	Cys	Asn	Thr 10	Gly	Asn	Gln	Cys	Cys 15	Ser	
Gly Ma	a Cys Il 2:		Val	Ser	Cys	Leu 25								
4.111.	215 272 DNA Conus	glorian	naris	3										
*(!2:) · *(!!!! · *(!!!! ·	003 (1·)	252)												
R4)). ang ka Met by L	215 a oftg a s Leu Tr	ng tgc nr Cys 5	atg Met	atg Met	atc Ile	gtt Val	get Ala 10	gig Val	ctg Leu	ttc Phe	ctg Leu	aca Tr 15	gcc Ala	48
tijj io Top Th	g dta g ir Leu V 2	al Met	gct Ala	gat Asp	gac Asp	toc Ser 25	aac Asn	aat Asn	gga Gly	ctg Leu	gcg Ala 30	aat Asn	ctt Leu	96
titt to Ene Se	eg daa t er Lys Sa 35	ca cgt er Arg	gac Asp	gaa Glu	atg Met 40	gag Glu	gac Asp	ccc Pro	gaa Glu	gct Ala 45	tct Ser	aaa Lys	ttg Leu	144
gag aa Gli by	ia igg g vs Arg A:)	at tgc sp Cys	caa Gln	gca Ala 55	cta Leu	tgg Trp	gat Asp	tat Tyr	tgt Cys 60	cca Pro	gta Val	ccg Pro	ctc Leu	192
157 50 Sel Se 63	da tog g er Ser G	gt gat ly Asp	tgc Cys 70	tgc Cys	tat Tyr	ggc Gly	tta Leu	atc Ile 75	tgt Cys	ggc Gly	cct Pro	ttc Phe	gtc Val 80	240
	et jaa t Le Ely T		tgtc	ttc	tact	ccsa:	tc							272
21(> *211> <211> <210>	216 84 FFT Conus	gloria	mari	S										

Met Iys Leu Thr Cys Met Met Ile Val Ala Val Leu Phe Leu Thr Ala

Trp Thr Leu Val Met Ala Asp Asp Ser Ash Ash Gly Leu Ala Ash Leu 20

The Ser Lys Ser Arg Asp Glu Met Glu Asp Pro Glu Ala Ser Lys Leu

Clu Lys Arg Asp Cys Gln Ala Leu Trp Asp Tyr Cys Pro Val Pro Leu 55

Leu Ser Ser Gly Asp Cys Cys Tyr Gly Leu Ile Cys Gly Pro Phe Val

cys Tle Gly Trp

.:10: 217 -::11: 33 -::12: PFT

Conus gloriamaris X 1232 30

..200 - 2211-SITE

+1)..(33)

Maa at residues θ and 33 may be Trp or bromo-Trp; Xaa at residues 22.37 f and 21 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su Lpho-Tyr or O-phospho-Tyr; Xaa at residues 10, 12 and 27 may be P ro or hydroxy-Pro

-400 - 217

 Λsp /ys Gln Ala Leu Xaa Asp Xaa Cys Xaa Val Xaa Leu Leu Ser Ser

Hy Asp Cys Cys Xaa Gly Leu Ile Cys Gly Xaa Phe Val Cys Ile Gly 20 25 30

Кза

1210 - 218

275 211 €

DNA 12.12

.213 Conus omaria

:220

CDS ::221 ·

(1)..(249):222 -

1400- 218

atg aaa ctg acg tgc ctg atg atc gtt gct gtg ctg ttc ttg acc gcc Met Lys Leu Thr Cys Leu Met Ile Val Ala Val Leu Phe Leu Thr Ala 10

tgg aca tic gic atg gct gat gas tos aas aat gga sig gea aat ett



									,,							
rp	Thr	Phe	Val 20	Met	Ala	Asp	Asp	Ser 25	Asn	Asn	Gly	Leu	Ala 30	Asn	Leu	
ctc Ehe	tog Ser	aaa Lys 39	toa Ser	cgt Arg	gac Asp	gaa Glu	atg Met 40	gag Glu	gat Asp	acc Thr	gat Asp	cct Pro 45	tct Ser	aaa Lys	ttg Leu	144
gag Glu	aac Aen 50	aga Arg	aaa Lys	act Thr	tgc Cys	caa Gln 55	aga Arg	agg Arg	tgg Trp	gat Asp	ttt Phe 60	tgt Cys	cca Pro	gga Gly	teg Ser	192
ots Leu 65	att Val	gya Gry	gtg Val	ata Ile	act Thr 70	tgc Cys	tgc Cys	ggt Gly	ggc Gly	tta Leu 75	atc Ile	tgt Cys	ttt Phe	ctg Leu	ttc Phe 80	240
	tgc Cys		tga	tagt	gat (gata [.]	ttst	ec to	500C	t						27
<21 <21	O:	21) 83														

<.212 PFT <213 - Comus omaria

F430 - 213

Met Lys Leu Thr Cys Leu Met Ile Val Ala Val Leu Phe Leu Thr Ala 1 $$ 5 $$ 15

Trp Thr Phe Val Met Ala Asp Asp Ser Ash Ash Gly Leu Ala Ash Leu 20 25 30

Phe Jer Lys Ser Arg Asp Glu Met Glu Asp Thr Asp Pro Ser Lys Leu 40

Glu Asn Arg Lys Thr Cys Gln Arg Arg Trp Asp Phe Cys Pro Gly Ser

Leu Tal Gly Val Ile Thr Cys Cys Gly Gly Leu Ile Cys Phe Leu Phe 70

Phe lys Tal

<210 > 2.0
<211 > 3.7 <211 - PHT <2130 Comus omaria 2200

SITE
[1]..(32)
Xia at residue 7 may be Trp or bromo-Trp; Xaa at residue 10 may b <221: e Pro or hydroxy-Pro

<400> 220

Lys Thr Cys Gln Arg Arg Xaa Asp Phe Cys Xaa Gly Ser Leu Val Gly Val Ile Inr Cys Cys Gly Gly Leu Ile Cys Phe Leu Phe Phe Cys Val + 2105 221 · .:117 274 -212- DNA - 213 - Conus dalli · .120 · - .:21 · GU3 (1)..(246)-400 - 211atg was only acg tgt gtg atg atc gtt get gtg ctg ttc ctg aca gcc Met Dys Dea Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 48 rigg acgorth gtb atg got gat gad too auc aat gga otg gig aat ott Trp Thr Leu Vil Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn Leu 96 the tog the test ogt gad gad atg gag gad odd gad ggt tot aaa ttg The Per Lys Lei Arg Asp Glu Met Glu Asp Pro Glu Gly Ser Lys Leu 15 40 45 144 ing ina wag gat tgo dan gan han tgg gat that tgt don gta deg ttd 192 lu lys Lys Asp Cys Gln Glu Lys Trp Asp Tyr Cys Pro Val Pro Phe ing iga tog agg tat tgo tgo gat ggo tot ato tgt coa tot tto tto Leu Gly Der Arg Tyr Cys Cys Asp Gly Phe Ile Cys Pro Ser Phe Phe 240 €.5 274 tgo ict flatagtgat gtottotota Eteccoto lýs Ala

4210 ← 202 #211 ← 30

212 - PFT

:213 - C nus dalli

+400× 213

Met Lys leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 1 5 15

Trp Thr leu Val Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn Leu 25 50

Phe Ser Lys Leu Arg Asp Glu Met Glu Asp Pro Glu Gly Ser Lys Leu

Glu Lys Lys Asp Cys Gln Glu Lys Trp Asp Tyr Cys Pro Val Pro Phe 50 55

Leu Gly Car Arg Tyr Cys Cys Asp Gly Phe Ile Cys Pro Ser Phe Phe Cys Ala +110 - 213 111 31 ..1.: FET - 213 - Conus dalli - .120 -- 121 -SITE . 12: +1)..(31) Maa at residue 4 may be Glu or gamma-carboxy-Glu; Kaa at residue may be Trp or bromo-Trp; Xaa at residues 8 and 13 may be Tyr, 1 DE-I-Tyr, mcno-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 10, 12 and 26 may be Pro or hydroxy-Pro A 150: - 223 Asp Dys Din Xua Lys Xaa Asp Xaa Cys Xaa Val Xaa Phe Leu Gly Ser 10 15 Arg Maa 'ys Cys Asp Gly Pne Ile Cys Maa Ser Phe Phe Cys Ala -010 - 0.4 -011 - 071 -012 - 0MA -013 - Tonu Conus malli 31.0 208 321 · 338 322 · (352) 4,0 - 2,24 the add and and and the dtg atd atd get get gtg ttg tto etg aca god 48 That Lys Leu Thir Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala igo acq ota que atg qui qui que tec auc aut gga etg geg aut cat 96 Ir Thi Leu Val Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn His 20 iti tgq aaa toa ogt qao jaa atg gag gao oot gaa got tot aaa ttg 5 4 4 Ph- Trp Lys Ser Arg Asp ilu Met Glu Asp Pro Glu Ala Ser Lys Leu 4.0 jai aas ägg gat tgo saa jgo gaa tgg gag ttt tgt ata gta dog gto ili Lys Arg Asp Cys Gln Hiy Glu Trp Glu Phe Cys Ile Val Pro Val Str gga tit gig tat igo igo see igg cit ato igi ggo cot its gio Nel Gly Fhe Val Tyr Dys Dys Pro Trp Leu Ile Cys Gly Pro Phe Val 65 70 75 30 240 271 tgr gtt gat atc tgatgtette tatebeete Cys Val Asp Ile

4213 - Conus dalli ₹400 + 225 Met Lys beu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala 1 5 10 15 Irp Thr Leu Val Met Ala Asp Asp Ser Asn Asn Gly Leu Ala Asn His The Trp Lys Ser Arg Asp Glu Met Glu Asp Pro Glu Ala Ser Lys Leu 40 Blu Lys Arg Asp Cys Gln Gly Glu Trp Glu Phe Cys Ile Val Pro Val Teu :Ly Phe 7al Tyr Cys Cys Pro Trp Leu Ile Cys Gly Pro Phe Val 65 70 80 (ys Val Asp Ile -010- 226 -011- 33 111. 112. 113. EFT Conus dalli _11(0 - .0:1 -- .12 -SITE 1)..(33) 1.1.2 Xaa at residues 5 and 7 may be Glu or gamma-carboxy-Glu; Xaa at r esidues 6 and 22 may be Trp or bromo-Trp; Xaa at residues 12, 21 and 27 may be Pro or hydroxy-Pro; fITE 1)..(33) 31 Maa at residue 16 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-T yr, C-sulpho-Tyr or O-phospho-Tyr 4.4).: 226 Asp Tys Gln Gly Xaa Xaa Xaa Phe Cys Ile Val Xaa Val Leu Gly Phe Val Kaa Cys Cys Maa Xaa Leu Ile Cys Gly Kaa Phe Val Cys Val Asp 20 25 30

Ile

204.0
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27.

<210 + 011 + 010 + 013	: - 2 : - E	:27 :65 :NA 'enus	per	nac∈	eus												
2 21 2	. (たら (1)	(234	1)													
- 400 atg Met I	500	otg Deu	aeg Thr	tgc Cys 5	ctig Leu	atg Met	atc Ile	att Ile	gct Ala 10	gta va.	ctg Leu	ttc Phe	ttg Leu	acc Thr 15	gcc Ala	4 :	3
i ag Trp	ada Thr	tto Pne	gto Val 20	atg Met	gct Ala	gat Asp	gac Asp	ccc Prc 25	aga Arg	gat Asp	gaa Glu	ccg Pro	gag Glu 30	gca Ala	cgt Arg	<u>C</u> 1	6
110 A3p	iaa .:!u	atg Met	aac Asn	dod Pro	gca Ala	gcc Ala	tct Ser 40	aaa Lys	ttg Leu	aac Asn	gag Glu	aga Arg 45	ggs Gly	tgc Cys	ctt Leu	14	4
1	:tt Val	gat Asp	tat Tyr	ttt Pne	tqc Cys	ggc Gly 55	ata Ile	ccg Pro	ttt Phe	gtg Val	aac Asn 60	aac Asn	ggg Gly	cta Leu	tgc Cys	1 9,	2
t jo Tys	ajt Per	31A 14c	aat Asn	tgt Cys	gtt Val 70	ttt Phe	gts Val	tgc Cys	aca Thr	ccc Pro 75	caa Gln	ggg Gly	aag Lys			23	4
1.33	aast	gest. Is	gtga	tgtc	tt c	tatt	eccat	t c								26	5
+ 21 21 + 21 + 21	l · 2 ·	228 79 PFT Cinu	s þe	nnac	eu <i>s</i>												
4 (Ç ,	213															
Het I	Lys	Leu	lhr	Cys 5	Leu	Met	Ile	Ile	Ala 10	Val	Leu	Phe	Leu	Thr 15	Ala		
Prţ	Thr	Fhe	Val 20	Met	Ala	Asp	Asp	Pro 25	Arg	Asp	Glu	Pro	Glu 3C	Ala	Arg		
As p	Glu	Met 35	Asn	Pro	Ala	Ala	Ser 40	Lys	Leu	Asn	Glu	Arg 45	Gly	Cys	Leu		
II. u	Val 10	. Asp	Tyr	: Phe	e Cys	Gly 55	Ile	Pro	Phe	Val	Asr. 60	Asn	i.	, fier	. N.s		
57.8 5.1	: Fer	n Fly	- Asr	T Cys	s Val 70	. Phe	Val	. Cys	Thr	Pro 75	o Gln	Gly	r i ya				
<1 <1	. i	.:29 31 25.T Cont	ıs pe	enna≪	ceus												

, a 5 G 5 A,	SITE 1)(31) Xaa at residue 4 may be Glu or gamma-carboxy-Glu; Xaa at resi 7 may be Tyr, 125-I-Tyr, meno-iodo-Tyr, di-iodo-Tyr, O-sulpho or C-phospho-Tyr; Xaa at residues 12 and 30 may be Pro or hy y-Pro	5-15r
(400 ⋅	2.:9	
GLY - LYS	s Leu Xaa Val Asp Xaa Phe Cys Gly Ile Xaa Phe Val Asn Asn 5 10 15	
317 Lei	a Cys Cys Ser Gly Asn Cys Val Phe Val Cys Thr Xaa Gln 25 30	
<pre><210 * <0111 + <0122 + <0133 +</pre>	4.1 W	
::::::::::::::::::::::::::::::::::::::	700 (1.2°(229)	
:40)+ ;;toqa	(27) cain athateatog atocatotgt coatocatot gtocatocat ecattoatto	60
	tgom aanotgtoat laatatttga gtototottt otgtttttat otgacagatt	120
1 487 (Agn (gag aga gac tgc oft aat git gat tat tit tgc ggc ata ccg tit Glu Arg Asp Cys Leu Asn Val Asp Tyr Phe Cys Gly Ile Pro Phe 5 10 15	169
gtg aa Val As	o amo gig dta tg: tgd agt ggd aat tgt gtt ttt gtd tgd ada n Asn Gly Leu Dys Cys Ser Gly Asn Cys Val Phe Val Cys Thr 2) 30	27
	a ggg aag taaaactgee gtgatgtett etetteeeet etagtagtag n Gly Lys - 35	269
iaggig	gcog ototagagga tocaagetta ogtaegegtg catgegaegt catagetett	329
ent at ag	tqts acstaaatto aattoactgg ssgtoogttt tacaacgtog tgactgggaa	339
aacest	ggog ttacccaact taatcgcctt gbagcacat	428
<pre>- 2113 - 2113 - 2115 - 2115</pre>	#31 %6 PET Cinus marmoreus	
· 400	251	
Asn Gl :	u Arg Asp Cys Leu Asn Val Asp Tyr Phe Cys Gly Ile Pro Phe 5 10 15	
∵al As	sn Asn Gly Leu Cys Cys Ser Gly Asn Cys Val Phe Val Cys Thr 20 25 30	

Francisco Control of C

Pro Gln Gly Lys 75 k210 + 2:1
k211 + 30
k012 + PRT
k213 + Cunus marmoreus + :: * :: 13 + -1.111 -SITE 1)..(30) M4A at residue 6 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Ty r, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 11 and 29 may b ⊕ Pro or hydroxy-Pro 4400 - 23.1 Cys Leu Ash Val Asp Xaa Phe Cys Gly Ile Xaa Phe Val Ash Ash Gly 10 15 her: Tys Tys Ser Gly Asn Cys Val Phe Val Cys Thr Xaa Gln 12100 055 2011 0 027 2013 0 00A (013 0 000 imus marmoreus <222 + (105)..(224)</pre> (4))) tigaratia, caticatégat écatétyfée afécatécat téatféatte gétyééaaac 60 hymbatalah attigagton obottiongt tittiatotga daga titg gad aag aga 116 Leu Asp Lys Arg gay tigo ong gna got gat tat tat tigo gto tita bog titt gitg ggo aad Gli lys Leu Glu Ala Asp Tyr Tyr Cys Val Leu Pro Phe Val Gly Asn 164 jij atg tid tgo agt ggo att tgt gtt tit gto tgo ata god daa ogd Bly Met Dys Cys Ser Gly Ile Cys Val Phe Val Cys Ile Ala Gln Arg 212 30 35 227 tit aaa ado gto tga Phe Dys Thr Val 40 *210 > 234 211 -40212. ERT <213 % lonus marmoreis <400 234

Leu Asp Lys Arg Glu Cys Leu Glu Ala Asp Tyr Tyr Cys Val Leu Pro

15 10 5 Phie Val Gly Asn Gly Met Cys Cys Ser Gly Ile Cys Val Phe Val Cys lle Ala Gln Arg Phe Lys Thr Val <:::0 +</pre> 235 *1111 * *1112 * 26 PET Conus marmoreus 12.20 PITE (1)...(36) Maa at residues 1 and 4 may be Glu or gamma-carboxy-Glu; Xaa at r residues 7 and 8 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr , G-sulpho-Tyr or C-phospho-Tyr; Xaa at residue 12 may be Pro or hydroxy-Pro Kaan Nys Leu Xaa Ala Asp Xaa Xaa Cys Val Leu Xaa Phe Val Gly Asn 317 Met Cys Cys Ser Gly Ile Cys Val Phe Val Cys Ile Ala Gln Arg Pr.o Eys Thr Val 2 - (DUFInus marmoreus 42.4 < j. 1 · 35.3 <2.1 · (1:1) · · (241) 4 2 2 30 discognituo ggaartuoog ggiogadato atdateatog atdeatetgi edatedated at matters teattegety coassactyte atssacattt gagtetetet ttetytttt 120 atht jacaja tig aan gag aga gad igo off gaa dot gat tat git igo Let Asn Glu Arg Asp Cys Leu Glu Pro Asp Tyr Val Cys do: ata ing the grig the aac ggg cha tgo tgo age gga att egt ger 217 Cly Il. Pro Phe Val Phe Ash Gly Leu Cys Cys Ser Gly 11e Cys Val 20 • t at t tgo ata goo caa aag tat taaaacgeeg tgatgtette tätteeeate 271 the He Dys Hie Ala Gln Lys Tyr 35 34 tagtagtägt aggeggeege tetagaggat ecaagettae gtaegegtje atgegaegte

atagetette tatagtgtea eetaaattea atteaetgge egtegtttta caaegtegtg 391
actgqqaaaa cootgqoqtt acccaactta ategcettqc agcacatece cotttegeca 451
gotgoograa tagoogaaga ggooogeaco gatogooott oocaacagtt gogoagootg - 511
aatgacgaat gggg 525
<pre>k2100</pre>
+(400) - 137
Len Åsn Glu Arg Asp Cys Leu Glu Pro Asp Tyr Val Cys Gly Ile Pro 1 10 15
Phe Val Phe Ash Gly Leu Cys Cys Ser Gly Ile Cys Val Phe Ile Cys 20 25 30
The Ala Gln Lys Tyr 35
CM10 .38 CM11 .35 CM12 . FET CM13 . Conus marmoreus
<pre>chile site chile site chile 1)(33) chile Maa at residue 4 may be Glu or gamma-carboxy-Glu; Xaa at residues</pre>
- c400 238
Asp 'ys Leu Kaa Xaa Asp Xaa Val Cys Gly Ile Kaa Phe Val Phe Asr. 10 15
Gry Leu Cys Sys Ser Gly Ile Cys Val Phe Ile Cys Ile Ala Gln Lys 20 25 30
Жад
(210 + .79 (211 + 507 (212 - 9NA (213 - Yonus marmoreus
<pre> <2.20 - <2.21 - DG <2.22 - [146](247)</pre>
<pre>430 > 239 ggtasgesty caggtacegg teeggaatte degggtegae ateateatea teategatee 60</pre>

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ottitotgttt gtatotgaca gattg gag aaa agg gog tgo ago aaa aaa tgg Glu Lys Arg Ala Cys Ser Lys Lys Trp l 5	172
gaa tat tgt ata gta oog ato ott gga tto gta tat tgo tgo oot ggo Glu Tyr Cys Ile Val Pro Ile Leu Gly Phe Val Tyr Cys Cys Pro Gly 10 15 20 25	220
tta ato tgt ggt det tte gtd tge gtt tgatagtgat gtetteteet Leu Ile Cys Gly Pro Phe Val Cys Val 30	2167
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gaogtoatag etettetata gtgteaeeta aatteaatte aetggeegte gttitaeaae	367
gtogtgadtg gjaaaacoot ggogttacco aacttaatog cottgeagea cateccectt	447
nogodágotig gogtaátaag ogaagagged ogdaeogate godetteedá acagttgege	5 C 7
aqostgaatq gogaaatggg aogogoootg	537
<pre><miios .40="" .44="" <="" <miios="" pre=""></miios></pre>	
Glu Lys Arg Ala Cys Ser Lys Lys Trp Glu Tyr Cys Ile Val Pro Ile 1 5 10	
Leu Gly Fne Val Tyr Cys Cys Pro Gly Leu Ile Cys Gly Pro Phe Val 25 30	
Cys Val	
K210 L41	

<2113 + innus marmoreus

<2220 -<221 · <222 · SITE

1)..(31)

Xaa at residue 6 may be Trp or bromo-Trp; Xaa at residue 7 may be 31u or gamma-carboxy-Glu; Xaa at residues 8 and 18 may be Tyr, 1 25-1-Tyr, mono-iodo-Tyr, di-iodo-Tyr, D-sulpho-Tyr or O-phospho-Tyr; Xaa at residues 12, 21 and 27 may be Pro or hydroxy-Pro <223 ~

<400> 241

Val Xaa Cys Cys Xaa Gly Leu Ile Cys Gly Xaa Phe Val Cys Val 20 25 30	
<pre><210 > 040 <211 > 050 <312 + 0MA <313 + Conus omaria</pre>	
<pre>-020+ -021+ 023 -022+ (149)(271)</pre>	
(400) - 242 adaqooggta ogootgoagg tacoggtoog gaattooogg gtogacatoa toatoatoat	60
ogationates grocatedat coarreatte atteaetgee aaactgreat aaatatttga	120
grotototott otgittitat otgadaga tig aad gag aga gad igo ott aat Leu Asn Glu Arg Asp Cys Leu Asn 1 5	172
gtt gat fat tot tgt ggd ata dog tot gtg aad aad ggg dta tgd tgd Val Asp Tyr Pne Cys Gly Ile Pro Phe Val Ash Ash Gly Leu Cys Cys 15 20	220
agt ggc :at tgt gtt tft tgt ctg cac acc cca agg gaa gta aaa ctg Ser Bly Asn Cys Val Phe Cys Leu His Thr Pro Arg Glu Val Lys Leu 25 30 35	268
nog tgatqtotto tottoopsto tagtagtagt aggeggeege tetagaggat Ers	321
ccaagettas gtacgegtge atgegaegte atagetette tatagtgtea eetaaattea	381
attractque egtegitta caacgiegig acigggaaaa ecciggegit acceaacita	441
atogoottis agcacatooc cotttogoca jotggogtaa tagogaagag gooogcacog	501
atomosofile ocaacagitg ogsageetga atggogaatg ggacgegeee t	552
011(0) 143 01110 41 01100 FFT 01100 Conus omaria	
<4(-, >143	
Let Asn Blu Arg Asp Cys Leu Asn Val Asp Tyr Phe Cys Gly Ile Pro 1 15	
Phe Val Asn Gly Leu Cys Cys Ser Gly Asn Cys Vil Phe Cys Leu 20 25 30	
His Thr Pro Arg Glu Val Lys Leu Pro 35	
<210> .446 <211> .37 <212> PRT	

+313> Conus cmaria · _: (0:-. 23113 SITE -1)..(37) · .:12:1 Eaa at residue 7 may be Tyr, 125-I-Tyr, mono-icdo-Tyr, di-iodo-Ty 1, 0-sulph:-Tyr or 0-phospho-Tyr; Xaa at residues 12, 31 and 37 m ay be Pro or hydroxy-Pro; Xaa at residue 33 may be Glu or gamma-c arkoxy-Glu - 400 - 244 Ast Tys Leu Asn Val Asp Xaa Phe Cys Gly Ile Xaa Phe Val Asn Asn Gry Leu Cys Cys Ser Gly Asn Cys Val Phe Cys Leu His Thr Xaa Arg Mai Val Lys Leu Xaa +210 + 349 11 + 213 1.1 · . 11 . 11 8 ESTA Tenus obscurus - 325 · 2010 (80...(131) . . 23: -- 4) [1 - 145 matricated gippoarcoat positioatto atteatiged againgtage agaitaticag institute: the objecting of the object of the design of the object of the contract of the object of 112 aga log data ogg dys Leu Val Tyr Gly 1 Fig. not test gad tigg odg add att gog ggt atg gag tigd tigd agt aaa Tinn Fro Dys Asp Trp Leu Thr The Ala Gly Met Blu Cys Cys Ser Lys 160 $_{\rm hig}$ tgc tit atg atg tgc tgg taaaactgcc gtgatgtctt ctastecsct c $_{\rm hys}$ $_{\rm Ys}$ Bie Met Met Cys Trp 212 + ..11 + ..346 + ..11 + ..32 __12 + ...EE.T .13 - Conus obscurus 10(> 146 Ang Ser Lys Arg Cys Leu Val Tyr Gly Thr Pro Cys Asp Trp Leu Thr ile Ala Gly Met Glu Cys Cys Ser Lys Lys Cys Phe Met Met Cys Trp .110> 147 .211> 28

4212 · PPT 2213 Conus obscurus :22 SITE 11...(28) Xaa at residue 4 may be Tyr, 125-I-Tyr, monc-iodo-Tyr, di-iodo-Ty r, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue 7 may be Pro or hydroxy-Pro; Xaa at residues 10 and 28 may be Trp or bromo-Trp; X aa at residue 17 may be Glu or gamma-carboxy-Glu <40 ↔ 247 Cys beu Val Xaa Gly Thr Xaa Cys Asp Xaa Leu Thr Ile Ala Gly Met Xaa Oys Oys Ser Lys Lys Cys Phe Met Met Cys Xaa 6217 + 248 6211 + 13 + 6212 + DMA 6217 + Dinus radiatus 01.1 · 01.7 · (109) < 100 → 243 a 'r j aar bag aga gae tge bat gaa gtt ggt gaa ttt tgt gge tta beg Leu Asr. Glr. Arg Asp Cys His Glu Val Gly Glu Phe Dys Gly Leu Pro 49 tt: ata lag aac ggg cta tgc tgc agt cag att tgt tta ggt gtc tgc lel le lys Asn Gly Leu Cys Cys Ser Gln Ile Cys Leu Gly Val Cys 97 139 do: aaa jtg ttt taaaactgoo gtgatgtott ctactoccat Ala Lys Tal Phe . .5 \$21.00 (14.9 \$21.120 (14.9 $\ \ \text{ for } F \vdash T$ %21.60 Cinus radiatus :4 > 349 Le : Ash \odot in Arg Asp Cys His Glu Val Gly Glu Phe Cys Gly Leu Pro LE. The Lys Asn Gly Leu Cys Cys Ser Gln The Cys Leu Gly Val Cys 20 A.: Lys Tal Phe <.10> ...0 <.11> ...2

CC12 · FPT CC13 · Conus radiatus	
<pre>chi20 - chi21 - SITE chimi - (i)(32) chimi - Xia at residues 4 and 7 may be Glu or gamma-carboxy-Glu; Xaa esidue 12 may be Pro or hydroxy-Pro</pre>	at r
-:400 + 250	
Asp Tys His Xaa Val Gly Xaa Phe Cys Gly Leu Xaa Leu Ile Lys Asn 1 10 15	
Sly Feu Dys Cys Ser Gln Ile Cys Leu Gly Val Cys Ala Lys Val Phe 20 25 30	
<pre>cultive</pre>	
-112 -1112 108 -111 1(100)	
(1)) (1) (1) 1 tin gir aag aaa gag tgo act goo aat ggt gaa ttt tgt ggo ata tog Le: Asp Lys Lys Glu Cys Thr Ala Asn Gly Glu Phe Cys Gly Ile Ser 1 5 15	49
gno litt qga ago tao ota tgo tgo agt gg: ogg tgt gta tto gto tgo Mal Ene Bly Ser Tyr Leu Cys Cys Ser Gly Arg Cys Val Phe Val Cys 20 25 30	97
ato lagityaact googtgatgt offictactoo oof Le	133
<pre></pre>	
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Leu Asp Lys Lys Glu Cys Thr Ala Ash Gly Glu Phe Cys Gly Ile Ser 1 15	
Val Phe Gly Ser Tyr Leu Cys Cys Ser Gly Arg Cys Val Phe Val Cys 20 25	
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11112
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         esidue 17 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-su
         lpho-Tyr or O-phospho-Tyr
-64 10. - 25-3
Maa Cys Thr Ala Asn Gly Xaa Phe Cys Gly Ile Ser Val Phe Gly Ser
Maa Leu Cys Cys Ser Gly Arg Cys Val Phe Val Cys Ile 20 \,
:010 - 014
:011 - 133
:012 - 0NA
        HA
CD13 +
         Comus radiatus
-0.120 -
-0.121 - -0.03
-0.131 - - .).. 100)
-(4)) - ...4
itt: gi: aag aaa gag tgc act acc aat ggt gaa ttt tgt ggc ata tcg
Lo. Asp Lys Lys Glu Cys Thr Thr Asn Gly Glu Phe Cys Gly Ile Ser
The lett goal ago the challege tgc agt ggc etg tgt gta the gte tgc 7al line Ala Ser Phe Leu Cys Cys Ser Gly Leu Cys Val Phe Val Cys
                                                                                           97
                                          25
                                                                                          133
 and tagingaact googtgatgt officiation oct
 11e
          253
 <210
 <211 ·
          EFT
 < 2.12
          linus radiatus
 <213
 < 400 - 215
 Leu Asr Lys Lys Glu Cys Thr Thr Asn Gly Glu Phe Cys Gly Ile Ser
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 Wal Phe Ala Ser Phe Leu Cys Cys Ser Gly Leu Cys Val Phe Val Cys
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 T.e
 4.1 * 156
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321:> Conus radiatus

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Pho Leu Cys Cys Ser Gly Leu Cys Val Phe Val Cys Ile
010 - 257
011 - 123
0112 - DNA
0113 - Comus radiatus
900.00 ·
(221 + CDS
((222 + Cd)..(200)
-(:t)]+-257
intigal aag aga aaa tgo ttt ooc aaa aat cat ttt tgt ggo ttt gtg
                                                                                     49
 La. Asp Lys Arg Lys Cys Phe Pro Lys Asn His Phe Cys Gly Phe Val
3\% itg stg aas tac cta tgc tgc agt ggc cgg tgt ata ttc gtc tgc 7\% Met Leu Asn Tyr Leu Cys Cys Ser Gly Arg Cys Ile Phe Val Cys
                                                                                      97
                                                                                     133
gra magtigaadt geegtgatgt ettetaetee eat
<111 > 253
<111 > 53
 :113 = EFT
(11) Conus radiatus
14C() 253
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Val Met Leu Asn Tyr Leu Cys Cys Ser Gly Arg Cys Ile Phe Val Cys
 4.1 > 219

2.11> 23

7.11.> PFT

8.11.> Cont
          Conus radiatus
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te Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O

130

K2230 Xaa at residue 4 may be Pro or hydroxy-Pro; Xaa at residue 17 may

```
-I hospho-Tyr
(40)(c) 21.9
Lys Cys Phe Maa Lys Asn His Phe Cys Gly Phe Val Val Met Leu Asn
                                     1.0
Maa Leu Cys Cys Ser Gly Arg Cys Ile Phe Val Cys Val
-C110- 1100
0.110 130
11.112° DIJA
ADIN- Comus regius
(120)
adal ors
4.0A1 - (1)..(99)
-(4.01 + -2.00)
the each againg and ago too ott bot otal gad tog titl tot good titl aat
Den Asn Lys Arg Ser Cys Leu Pro Leu Asp Trp Phe Cys Gly Phe Asn
ata att iga jog tit otg tgo tgt agt ggo tac tge ott gto gto tgo
118 11e 11y Ala Phe Leu Cys Cys Ser Gly Tyr Cys Leu Val Val Cys
ity taaimotgoo gtgatgtott otootooot o
14-30
-C21 +- 261
2212 PRE
214 Unus regius
(40) - 261
Leu Asn Lys Arg Ser Cys Leu Pro Leu Asp Trp Phe Cys Gly Phe Asn
lle The Gly Ala Phe Leu Cys Cys Ser Gly Tyr Cys Leu Val Val Cys
                                  25
: /:⊇ t:
```

<223> Xaa at residue 4 may be Pro or hydroxy-Pro; Xaa at residue 7 may

1211: 262 211: 29 212: EET

₹22€×

213 Conus regius

be Trp or bromo-Trp; Xaa at residue 23 may be Tyr, 125-I-Tyr, mon o-icdc-Tyr, di-iodo-Tyr, C-sulpho-Tyr or O-phospho-Tyr

<400> 252

Ser Cys Lou Maa Lou Asp Maa Phe Cys Gly Phe Asn lle Ile Gly Ala 10

Phe Leu Cys Cys Ser Gly Xaa Cys Leu Val Val Cys Met

-:::21()::-. 0.5 319

-212: DNA

-1113. - Pomus delessertii

-::0:::0:-

-: 1::1:-7.05

(1)..(285) -1.1.2.2**

<400 + 263

and amm etg acg tgt ctg ctg ate gtt get gtg ctg gtc ttg gcm gec 48 Met Lys bou Thr Cys Leu Leu Ile Yal Ala Val Leu Val Leu Ala Ala

tift bag the ate graiget ggd gad tog agt gat ggd dag gag aat oot 96 lýs Sin Phe Ile Val Ála GÍy Ásp Ser Ser Ásp GÍy Gln Glú Ash Pro .20

got otg agg toa oot ago gat too tot ggg aaa atg toa toa atg aag 144 Ála Leu Arg Ser Ero Ser Ásp Ser Ser Glý Lys Met Ser Ser Met Lys 40

ngo the rag ana egg etg atg gtg gtg can tot gen tog ann aga eca 192 Arj Ene Bin Thr Arg Leu Met Val Gly Gln Ser Ala Ser Lys Arg Pro 50

240 ago mag mag gao tgo ato coo ggo ggo gan ant tgt gat gta tto ogn Ser Lys Arg Asp Cys Ile Pro Gly Gly Glu Asn Cys Asp Val Fhe Arg

ena tao ngg tgo tgo agt gga tat tgo ata eta etc ett tgo gea 285 Pro Tyr Arg Cys Cys Ser Gly Tyr Cys Ile Leu Leu Leu Cys Ala 90

319 tgataaaget gesttgatgt etteteetee eete

< 110 . 4

<1.100 i'E T <2.12:

danus delessertii <113:

<400 - 2m4

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Cys Gln Phe Ile Val Ala Gly Asp Ser Ser Asp Gly Gln Glu Asn Pro 21

Ala Leu Arq Ser Pro Ser Asp Ser Ser Gly Lys Met Ser Ser Met Lys 25 40 45
Arg Ft.e Gln Thr Arg Leu Met Val Gly Gln Ser Ala Ser Lys Arg Pro 50
Ser Lys Arj Asp Cys Ile Pro Gly Gly Glu Asn Cys Asp Val Phe Arg 6: 70
Fr: Tyr Arg Cys Cys Ser Gly Tyr Cys Ile Leu Leu Leu Cys Ala 85
0.100
<pre>%23 ** SITE %22 ** (1 * (28) %23 ** Xaa at residues 4 and 14 may be Pro or hydroxy-Pro; Xaa at residu %23 ** Xaa at residues 4 and 14 may be Pro or hydroxy-Pro; Xaa at residue %</pre>
(40): 26f
Ass Tys Ile Xaa Gly Gly Xaa Asn Cys Asp Val Phe Arg Xaa Xaa Arg 10 15
Dys Dys Mer Gly Xaa Dys Ile Leu Leu Leu Cys Ala 20 25
(.10) 460 (.11) 1009 (.12) 1WA (.13) Conus striatus
- L1()- 11 - CES 114 (147)(233)
e: mrsc_feature : mrsc_feature : (1)1009 : n may be any nucleotide
<4) - 256 getgittbge engelaggtae eggteeggaa tteeniggte gacateatea teategatee 60
atot jtocat chathtatto attoattoat togotgocaa actguattaa atattoaagt 120
ctotitttit gittgigici aacaga tig aga igg igs att ooi agi ggi gaa ——————————————————————————
ott tgt tto ogo tog gat oac ata gga tgo tgo agt ggo áag tgo goa 221 Leu Dys Phe Arg Ser Asp His Ile Gly Cys Cys Ser Gly Lys Cys Ala

-Glu

112

10	15	20		25	
the qte tgc Phe Yal Cys	ttg taaaactgcc gtgatc Leu	gtott otecte	eccat ctagta	igtag	273
tagg:ggcoj	ctctagagga tccaagctta	cgtacgcgtg	catgcgacgt	catagetett	333
ctatagtgt:	acctaaattc aattcactgg	ccqtcqtttt	acaacgtcgt	gactqqqaaa	393
	tacceaactt aatogecttg				453
	ggocegoadd gategedett				513
	cotqtagogg ogcattaaac				573
	cacttgccag ogccctancg				633
	gttfleggeeg htttteeceg				693
	gaattantgo tttaccggna				753
	tenegtaant gggggccate				313
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ttaacsassa					1009
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<21.05 <21.15 FI <22.15 1 <22.35 Ka	TE)(d9) a at residue3 may be	Trp or brom	no-Trp; Xaa 2 9 may be 6	at residue 6 m	may b arbox

Maa at residue3 may be Trp or bromo-Trp; Xaa at residue 6 may be Pro or hydroxy-Pro; Xaa at residue 9 may be Glu or gamma-carboxy

```
<4000 2FF
Lei Ang Maa Cys Ile Xaa Ser Gly Xaa Leu Cys Phe Ang Ser Asp His
                                                                                                                            10
The Gly Cys Cys Ser Gly Lys Cys Ala Phe Val Cys Leu
                        269
-1.210 ±
<1211 ·
                      96
·1212 ·
                       DHA
                      Comus striatus
...1.3
  1.124
 -:::::1 -
                       D3
  2.2 (11..(87)
 (4.6) - 269
 try aga tag tag att oot agt ggt gat out tgt the ege tog gat eac
 Let Arg Trp Cys Ile Pro Ser Gly Asp Leu Cys Phe Arg Ser Asp His
                                                                                                                             10
  in a sign tight agt light and tight great tight tag that the light class can be seen for the control of the co
                                                                                                                                                                                                                                                  90
 Kallie Penus striatus
   Le: Ard Trp Cys Ile Pro Ser Gly Asp Leu Cys Phe Arg Ser Asp His
   The Gly Cys Dys Ser Gly Lys Cys Ala Phe Val Cys Leu 20 \,
   11,11 ·
12,4 1 ·
                           SITE
                           (1).. 27)
                       Kaa at residue I may be Trp or bromo-Trp; Xaa at residue i hay te
                              Pro or hydroxy-Pro
       45 - 271
      Kaa ly: Ile Kaa Ser Gly Asp Leu Cys Phe Arg Ser Asp His Ile Gly
                                                                                                                                  10
     Cys Cyn Ser Gly Lys Cys Ala rne Vai Cys Leu
                                                20
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273
 <2100
-0111: 90
-0111: PMA
 131 Conus striatus
4127 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 4121 + 41
                           (1)..(37)
 3400 × 272
 nt; againg tgo att cot agt ggt gat off tgt tto ogo tog gat cao
                                                                                                                                                                                                                                                                                48
  Led Arg Trp Cys Ile Pro Ser Gly Asp Leu Cys Phe Arg Ser Asp His
 ata raa tgc tgc agt ggc aag tgc gca ttc gtc tgc ttg taa
Ile Gln Cys Cys Ser Gly Lys Cys Ala Phe Val Cys Leu
20 25
                                                                                                                                                                                                                                                                                90
   (210 - 273
   1111. 194
   Kalls - FFT
   2013 - Conus striatus
  (45) · 373
   Le: Arg Trp Cys Ile Pro Ser Gly Asp Leu Cys Phe Arg Ser Asp His
   The Alm 'ys Cys Ser Gly Lys Cys Ala Phe Val Cys Leu 20 25
    1210 - 274
1211 - 11
1212 - 187
     3313 | Thus striatus
    %37.3 · 
%3.1 · %11E
+3.2 · +1)...(27)
    13.5 · Xis at residuel may be Trp or bromo-Trp; Xaa at residue 4 may be
                              Fr: or hydroxy-Pro
    *4:(-::4
    Mas Cys Tle Maa Ser Gly Asp Leu Cys Phe Arg Ser Asp His Ile Gln
                                                                                                                                                10
    Cyr Cys Ger Gly Lys Cys Ala Phe Val Cys Leu
    x. 1.3
... 1.3
... 1.5
                               . 75
                                . 16
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                                 "cnus obscurus
      LIS
                                 77)..(175)
       <400> 275
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115
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gfcttgcttt ctgttt gtg tct gac aga ttg aga tgg tgc gtt cct agc jgt 112 Val Ser Asp Arg Leu Arg Trp Cys Val Pro Ser Gly 1 5 10
qua qui tgt ogo ogo tat gaa tio gig gga tgo tgo agi ggo aag tgo 163 Glu Val Cys Arg Arg Tyr Glu Phe Val Gly Cys Cys Ser Gly Lys Cys 15 20 25
the ite gie ige tog taaaacigit gigalgiett etecteect e 206 Phe Phe Val Cys Ser ±0
+0.10+ .276 +0.10+ .43 +0.10+ .0ET +0.15+ .Comus obscurus
-04000 176
Val Fer Asp Arg Leu Arg Trp Cys Val Pro Ser Gly Glu Val Cys Arg 10 15
Arg Tyr Glu Phe Val Gly Cys Cys Ser Gly Lys Cys Phe Phe Val Cys 25 30
ner
-0.10%
<pre>cdist: cdists AITE cdists 1119) cdists 1219 Maa at residue 3 may be Trp or bromo-Trp; Kaa at residue 6 may be</pre>
$pprox 40 \gamma_{ m C} = 1.77$
Leu Arg Kaa Cys Val Kaa Ser Gly Kaa Val Cys Arg Arg Kaa Kaa Phe 1 15
Wal Gly Dys Dys Ser Gly Lys Cys Phe Phe Val Cys Ser 20 25
<pre>&dl) + 278 \$dll + 259 \$dld + DNA \$dl3 + Donus radiatus</pre>
<22.) · <22.) · ODS (222 > (22) (117)

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tta dag toa tgt gtg ago tgatooggog gttgatotto otooototgt Neu Lys Ser Cys Val Ser 30	147
quincatura itticipodig agiocicoti accigagagi ggicalgaac cacicalcac	207
machochet ggaggottoa gaggagotac attgaaataa aagoogoatt gb	259
-00100	
.40() - 279	
Ard Cer Thr Arg Cys Leu Pro Asp Gly Thr Ser Cys Leu Phe Ser Arg 1 10 15	
The Arg Cys Cys Gly Thr Cys Ser Ser Ile Leu Lys Ser Cys Val Ser 25 30	
CD10 180 -M110 18 M110 FFT GM1 - Crus radiatus	
CH21. CHTE CH21 I)(28) CH33.* Has at residue 3 may be Pro or hydroxy-Pro.	
v (o) (
Dyn Leu Maa Asp Gly Thr Ser Cys Leu Phe Ser Arg Ile Arg Cys Cys l 10 15	
Gly Thr Dys Ser Ser Ile Leu Lys Ser Cys Val Ser 20 25	
221)+ LEI <211+ 478 <213+ DNA <213+ Dnus geographus	
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ttg ace god tgg aca tte gte acg get gtg eet eac tee age gat gta Leu Thr Ala Trp Thr Phe Val Thr Ala Val Pro His Ser Ser Asp Val 15 20 25	159
ttg gag aat ott tat otg aag goa ott oac gaa acg gaa aac oac gaa Leu Glu Asn Leu Tyr Leu Lys Ala Leu His Glu Thr Glu Asn His Glu 30 45	207
ged tot aaa ttj aad gtg aga gad gad gag tgd jaa ddt det gga gat Ala Ser Lys Leu Asn Val Arg Asp Asp Glu Cys Glu Pro Pro Gly Asp 50 55 69	255
ttt tgt ggc ttt ttt aaa att ggg cog oct tgc tgc agt ggc tgg tgc Phe Cys Gly Phe Phe Lys Ile Gly Pro Pro Cys Cys Ser Gly Trp Cys 65 70 75	303
nto one tyg tgo god taaaactgoo gigalgicii olalloocci olgigolaco Phe Leu Trp Cys Ala 80	358
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<210> 283 <211> 30 <212> PET

sidues 6, 7, 18 and 19 may be Pro or hydroxy-Pro; Xaa at residues

47

95

143

194

314

318

\$2.33 - Maa at residues 3and 5 may be Glu or gamma-carboxy-Glu; Xaa at re

24 and 28 may be Trp or bromo-Trp <400 - 183 Asp Asp Maa Cys Kaa Kaa Kaa Gly Asp Phe Cys Gly Phe Phe Lys Ile Sly Haa Kaa Cys Cys Ser Gly Xaa Cys Phe Leu Xaa Cys Ala <210 - . 84 4211 - .13 tall min all -- Tomus textile <2.0 *
<2.1 * CIG
<2... * ... (164)</pre> 3.200 · <dul>...i.c_feature ₹21.1 · 1 · .T(318) childe n may be any nucleotide <41 (0) 254 go the againted act eta gag ged tig gag aat ett tat etg aag gea Cys Arg Ser Thr Leu Glu Ala Leu Glu Asn Leu Tyr Leu Lys Ala cat cat sha atg aac aac coo gaa gac tot gaa tig aac aag agg tigo His His G.u Met Ash Ash Pro Glu Asp Ser Glu Leu Ash Lys Arg Cys this dat but ugg aca agt tgt had bet gga abe lab tge tge bgt gge Ty: Asp :Fr Gly Thr Ser Cys Asn Thr Gly Asn Gln Cys Cys Ser Gly tgd: tgc ant the ghe tgc of taaaactgoo gigangioit chactcooff $\text{Tr}_{F} \cdot \text{Cys}$ [see Phe Val Cys Leu which actains taccingott gatetitigat tiggogogide cetteactigg that gaaded otof datood actototogog godotogogo atdoaadato aaaatanago gadagdadaa

~221~ misc_feature

tcac

<213 - Conus geographus

SITE 1)..(30)

<220 · <221 ·

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tgg Trp 35	ggg Gly	cag Gln	gca Ala	gga Gly	gga Gly 40	tgg Trp	ggg Gly	aaa Lys	ctt Leu	ttt Phe 45	ccg Pro	atg Met	gca Ala	cgc Arg	gac Asp 50	201
gaa Guu	atg Met	aaa Lys	aac Asn	ago Ser SS	gaa Glu	gtc Val	tot Ser	aaa Lys	ttg Leu 60	gac Asp	aat Asn	aag Lys	aga Arg	aag Lys 65	tgc Cys	249
got Ala	ηda Ala	gcc Ala	ggt Gly 70	gaa Glu	get Ala	tgc Cys	gta Val	ata Ile 75	cct Pro	atc Ile	att Ile	gga Gly	aac Asn 30	gta Val	ttt Phe	297
tido Cys	tga Sys	aaa Lys 85	ggc Gly	tac Tyr	tgt Cys	ctt Leu	ttc Phe 90	gtc Val	tgc Cys	att Ile	agt Ser	taaa	actgo	etg		343
t.qa.t	. godi	tta t	cacto	sakset	is to	gtyct	acct	. ggc	ottga	atct	ttga	attgo	gag t	egtgo	acatta	403
antg	rit to	atg a	agotk	agtict	g at	iduta	actct	atç	ggaga	acct	ctgt	iggto	dda a	acato	ccaaat	4.63
mag	ngg.	cat (oppa	atя												480
<pre>4. 10 4.:11 4:12 4::13 4::13</pre>			s que	ersin	านร											
<:00) .	288														
Mat 1	Lys	Leu	Thr	Суз 9	Met	Met	Ile	Val	Ala 10	Leu	Leu	Phe	Leu	Thr	Ala	
Tir	Phr	Fhe	Val 20	Thr	Ala	Val	qeA	Ser 25	Lys	Asn	Gla	Leu	Gla 30	Asn	Arg	
3.5	ijγ	Tip	Gly	Gln	Ala	Gly	Gly 40	Trp	Glγ	Lys	Leu	Phe 45	Pro	Met	Ala	
Arg	Asp	Glu	Met	Lys	Asn	Ser 55	Glu	Val	Ser	Lys	Leu 60	Asp	Asn	Lys	Arg	
178 55]/s	а	Ala	Ala	Gly 70	Giu	Ala	Cys	Val.	Iie 75	Pro	Ile	Ile	Gly	Asn 8.0	
7 t	Fhe	Çys	Cys	1.ys 85	Gly	Tyr	Cys	Leu	Phe 90	Val	Cys	Ile	Ser			
< 11.0	l ≯ 2÷	289 29 PFT Conu	ક વૃઘ	€rci	r.us											
<22 <22 <22 <22	15 25	SITE (1). Xaa 11 m	.(29 at r	esid	ue 6 o or	may hyd	be roxy	Glu -Pro	or g ; Xa	amma a at	-car res	boxy idue	-Glu - 22	; Xā may	a at re be Tyr,	sidué 125-f

在1000年,1000年1日本中,1000年,1000年,1000年,1000年日本中

-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr

<4005 039

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- 201130 Comus Leopardus
- (1226) -
- $0.21 \cdot -0.03$
- 30.22 · 1)...(246)
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- tong atainthe are acquired gat gab too aca aat gga otg gag aat ogt 96 Trp The File The Ala Asp Asp Ser Thr Ash Gly Leu Glu Ash Arg 20 30
- thit agg mag gealegt dae aac atg aag aac gec aaa gec tet aca tta 144 Phe Arg Lys Ala Arg Asp Asn Met Lys Asn Ala Lys Ala Ser Thr Leu 4.5
- pur dag ang ann geg tgt gtt gan ett get gag att tgt ged ach gge 192 Ala Glú Lys Lys Ala Cys Val Glu Leu Gly Glu Ile Cys Ala Thr Gly
- the the magae gag gas tgo tgo act ggt tes tgo est gto tto tgo 240 Phe Phe Leu Asp Glu Glu Cys Cys Thr Gly Ser Cys His Val Phe Cys
- Ha that agttamact gotgtgatgt offettetet collegtget acctggettg 296 Val Leu
- 356 ation: tga: * ggtgootgto ottoagtggt tgtgaaacoo totgatobta otototggad
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aac tgc tgc tat acc tat tgc ttt att gta gtc tgc cta taaaactacc

Asn 'ys Cys Tyr Thr Tyr Cys Phe Ile Val Val Cys Leu q'ga' jtent etactedect etgtgetgee tggettgate thtgattgge gegtgedett 336 dae light it gacccccctg atccgaccte tgggg kii10 + 294 -1.11 7 7 / -1.11 PFT .::1: Conus marmoreus -(4).1+ 274 Met Lys Leu Thr Cys Val Val Ile Val Ala Val Leu Phe Leu Thr Ala 1.0 Inp Inr Phe Ala Thr Ala Asp Asp Pro Arg Asn Gly Leu Glu Asn Leu 25 Phe Fer Lys Ala His His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu Asn Tys Arg Cys Pro Asn Thr Gly Glu Leu Cys Asp Val Val Glu Gln (1) Abn 'ys Tyr Thr Tyr Cys Phe Ile Val Val Cys Leu -21 - 195 -211 - 26 -211 - 19T -211 - 19T Conus marmoreus 6726 4.21 4.21 JITE 11..(26) End at residue 2 may be Pro or hydroxy-Pro; Xaa at residues 6 and 13 may be Glu or gamma-carboxy-Glu; Xaa at residues 17 and 19 ma y ce Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr cr -phospho-Tyr 441 1.15 Cyr Maa Asn Thr Gly Xaa Leu Cys Asp Val Val Maa Gir. Asn Cys Cys Kaa Thr Maa Cys Phe Ile Val Val Cys Leu 20 25 : 3: <2:: . 16 4 2 AMG<21 - -Conus quercinus ₹2. • <221> CFS

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Thr Ala Trp Thr Phe Val Thr Ala Asp Ser Ile Arg Ala Leu Glu Asp

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15				20					25					30	
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ttg aac Leu Asn	Glu	aja Arg 5)	gac Asp	tg: Cys	cga Arg	cct Pro	gta Val 55	ggt Gly	caa Gln	tat Tyr	tgt Cys	Gly Gly	ata Ile	510 ccd	192
tat aag Tyr Lys	cac His 65	aac Asn	tgg Trp	oga Arg	tgc Cys	tgc Cys 70	agt Ser	cag Gln	ctt Leu	tgt Cys	gca Ala 75	at: Ile	atc Ile	tgt Cys	240
gat tec Val Ser Pû	taac	abat	ict (gated	etact	ic to	ctgaa	agas	c tcc	3339	attc	aaca	atoca	aaa	296
тмаарсда	ica t	adaş	gatria	ad aa	аааа	angaa	а заа	азаза	aaaa	зааа	à.				340
<2100 3 <2110 8 <2120 P <2130 C	FT	are	enati	1.3											
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Ala Lys	Ala 35	Ang	Asp	Glu	Met	Glu 40	Asn	Ser	Gly	Ala	Ser 45	Pro	Leu	Asn	
Glu Arg	Asp	lys	Arg	Pro	Val 55	Gly	Gln	Tyr	Cys	Gly 60	Ile	Pro	Tyr	Lys	
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<211><211>	304 31 FRT Conus	s ar	enat	l.S											
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o-Trp

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	7.1	1 1	1.3	-		4

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Xaa Arg Cys Cys Ser Gln Leu Cys Ala Ile Ile Cys Val Ser 25

kd.100 - 395 <:211:- 281</pre> KIII 21: LOVA

ROLL Conus arenatus

-C220-

CDS = CDS

messa + 11..(334)

+(4.00 + -30.5)

partic and and etg and tgt gtg gtg and gtt gtt gtg etg tto ttg 48 Met Lys Leu Thr Cys Val Val Ile Val Val Leu Phe Leu

agu joo tigg asa tto gto aag got gat gad too ata aat gga ttg gag 96 The Ala Frp Thr Phe Val Lys Ala Asp Asp Ser Ile Ash Gly Leu Glu 20

ast off titt dog aag goa ogt dad gaa atg aag aad dod gaa god tot 144 Asn Leu Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser

aaa ttg aac gag agg tgo ctt gaa aag ggt gta ctt tgt gat ccg agt Lys Leu Asn Glu Arg Cys Leu Glu Lys Gly Val Leu Cys Asp Pro Ser 192

got gga aac tgc tgt agt ggc qaa tgc gtt tta gtc tgc ctc Ala 3ly Asn Cys Cys Ser Gly Glu Cys Val Leu Val Cys Leu 234

281

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Asn Glu Arg Cys Leu Glu Lys Gly Val Leu Cys Asp Pro Ser Ala Gly

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1.10 307
42 11> 25
-11123 PET
Conus arenatus
-:230cm
-::::12: SITE
-::::22: (1 ..(25)
\times 2233 . Xwa at residues 3 and 19 may be Glu or gamma-carboxy-Glu; Xaa at
        residue 10 may be Pro or hydroxy-Pro
7:10
Ms beu Maa Lys Gly Val Leu Cys Asp Maa Ser Ala Gly Asn Cys Cys
Jer G_y Maa Cys Val Leu Val Cys Leu
20 25
D11A
        Innus arenatus
<2220 +
<221 - CDS
<222 · : )..(240
<400 ⋅ 3 3
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                                                                                 96
                       20
aat off the ofg aag goa tat cac gaa ang aac too gaa god fot aaa
                                                                                 144
Asn Leu Ene Leu Lys Ála Tyr His Glu Met Asn Ser Glu Ála Ser Lys
tig gac sag aaa gag tgc gtt gct ggt agt cac tit tgt ggt tit ccg
Leu Asp lys Lys Glu Cys Val Ala Gly Ser His Phe Cys Gly Phe Pro
                                                                                 142
asa att jgs ggg doa tgd tgd agt ggd tgg tgd ttt ttd gtd tgd ttg
Lys Ile My Gly Pro Cys Cys Ser Gly Tr Cys Phe Phe Val Cys Leu
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^{· 2130} Conus arenatus

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Asp Arg Gly Ile Trp Gly Glu Pro Leu Ser Lys Ala Arg Asp Glu Met

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and god tgg and the god acg got gtt gad too aaa cat god ctg gog Ann Ala Trp Thr Phe Ala Thr Ala Val Asp Ser Lys His Ala Leu Ala 15 20 25 30	96
ada ott itt atg aag goa ogt gad gaa atg tat aad ood gat god act Lys leu She Met Lys Ala Arg Asp Glu Met Tyr Ash Pro Asp Ala Thr 35 40 45	144
ana itg qac gat aag aga tgg tgc gct tta gat ggt gaa ctt tgt atc Evs leu Asp Asp Lys Arg Trp Cys Ala Leu Asp Gly Glu Leu Cys Ile 50 55 60	192
ata deg atc att ggg tod ata ttt tgd tgd dat ggd ata tgt atg atd lie Pro Mal Ile Gly Ser Ile Phe Cys Cys His Gly Ile Cys Met Ile 45 70 75	240
two tigo gto tagttgaadt googtgatgt ottotacted cototigtgot Tyr Cys Val 80	289
accortagett tgatotttga tigodotgig occitizacing attaigaato octotgatoo	349
tactototga agadotottg gggtocaada tocasataaa gogacatood aaaaaaaaaa	409
4446-aaaaa	419
:210	
3400 · 315	
Met Lys Leu Thr Cys Val Val Val Val Ala Val Leu Phe Leu Asr Ala 1 5 10 15	
Trp Thr Phe Ala Thr Ala Val Asp Ser Lys His Ala Leu Ala Lys Leu 20 25 30	
Fine Met Lys Ala Arg Asp Glu Met Tyr Asi Pro Asp Ala Thr Lys Leu 35 40 45	

Asp Asp Lys Arg Trp Cys Ala Leu Asp Gly Glu Leu Cys Ile Ile Pro Val 159 Gly Ser Ile Phe Cys Cys His Gly Ile Cys Met Ile Tyr Cys 80 70 Val <2100 316 $< 2.112 \times$ 29 (212) PFT KM130 Conus tessulatus <221 · SITE <2.13 · Xaa at residue 1 may be Trp or bromo-Trp; Xaa at residue 7 may b e Glu or gamma-carboxy-Glu; Xaa at residue 12 may be Pro or hydro xy-Pro; Xaa at residue 27 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, d i-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr < 401> 316 Naa Cys Ala Leu Asp Gly Xaa Leu Cys Ile Ile Xaa Val Ile Gly Ser The Fhe Cys Cys His Gly Hie Cys Met Ile Kaa Cys Val -52 113 -12 113 317 408 DNF_{λ} 11.11.25 Conus impērialis + - - - -4. 2.2 (12) :221. CDS <222 (7 .. (240) ggated atg aaa dtg adg tgd gtg gtg ttd gtt get gtg deg ttd ttg Met Lys Leu Thr Cys Val Val Phe Val Ala Val Pro Phe Leu acc god tog gta tto ato acg got gat gad too aga aat gga ato gag The Ala Ser Val Phe Ile Thr Ala Asp Asp Ser Arg Asm Gly Ile Glü aar oft cot cog atg aga ogt cac gaa atg aag aac noc ama god tot. Ast Let Pro Arg Met Arg Arg His Glu Met Lys Asn Pro bys Ala Scr An: ttg dad aag aga dag tgd ligh gta daa ggt gaa att tgt 192 met; Lys Leu Asn Lys Arg Gin Cys Arg Val Glu Gly Glu Tie Cys Gly Met otg ttt jaa goa caa tgo tgo gat ggo tgg tgo ttt tto gto tgo atg Leu Phe Glu Ala Gln Cys Cys Asp Gly Trp Cys Phe Phe Val Cys Met 240

134	
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Fro Arg Met Arg Arg His Glu Met Lys Asr. Pro Lys Ala Ser Lys Leu 35	
Asn Lys Arg Gln Cys Arg Val Glu Gly Glu Ile Cys Gly Met Leu Phe 50	
Glu Ala Gln Cys Cys Asp Gly Trp Cys Pne Phe Val Cys Met 05	
Wills 919 Wills 27 Wills PRT Wills Conus imperialis	
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aat off tit dog aag goa ogt dad gaa atg aag aad dod gaa god tot Asn Leu Fhe Pri Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser 35 40 45	144
aaa tig aac aag agg ige git gac oot ggi gaa tii igi ggi oog gga Lys Leu Asn Lys Arg Cys Val Asp Pro Gly Glu Phe Cys Gly Pro Gly 50 60	192
ttt gga dat tgc tgc act ggc ttc tgc ctt tta gtc tgc atc Phe Gly Asp Cys Cys Thr Gly Phe Cys Leu Leu Val Cys Ile 85	234
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Prie Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35 40 45	
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Asp Dys Dys Thr Gly Phe Cys Leu Leu Val Cys Ile 65 70 75	
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aid joe tigg aca the ghe and got gan gad too aga aan gan thig gag Thr Ala Irp Thr Phe Val Met Ala Asp Asp Ser Arg Ash Asp Leu Glu 15 20 25 30	96
ait itt itt otg aag goa ogt oat gaa atg aag aac ooc gaa got tot Ain leu The Leu Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser 35 40 45	144
ala itg mad aag aga tgc ott oda aat ggt gta ott tgt gat otg gga Lys Leu Asn Lys Arg Cys Leu Pro Asn Gly Val Leu Cys Asp Leu Gly 50 55	192
tot dea dea tac tge tge agt gge tgg tge geg ate gte gte tge ate Ser Pro Pro Tyr Cys Cys Ser Gly Trp Cys Ala Ile Val Val Cys Ile 85	240
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Trr Thr Phe Val Met Ala Asp Asp Ser Arg Asm Asp Leu Glu Asm Leu 20 25 30	
Fhe Leu Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 35	
Asn Lys Arg Jys Leu Pro Asn Gly Val Leu Cys Asp Leu Gly Ser Pro 50 60	

Pro Tyr Cys Cys Ser Gly Trp Cys Ala Ile Val Val Cys Ile

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·(211)

4.8

144

192

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つ以7

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tuamacture grgangigti etacheesat sigigetaes sitegag

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70

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421.5 21.1

Conus atlanticus <21 ->

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aaa ttg aac aag agg tgc cet aac act ggt gaa tta tgt gat gtg gtt Lys Leu Asn Lys Arg Cys Pro Asn Thr Gly Glu Leu Cys Asp Val Val	192
gaa caa aac tgc tgc tat acc tat tgc ttt att gta gtc tgc cta Glu Gln Asn Cys Cys Tyr Thr Tyr Cys Phe Ile Val Val Cys Leu 65 70 75	237
thaaastass gtgatgtott stactoosat stgtgstass setsgag	284
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Met Lys Leu Thr Cys Val Val Ile Val Ala Val Leu Phe Leu Thr Ala 1 10 15	
Erp Enr Phe Ala Thr Ala Asp Asp Pro Arg Asn Gly Leu Glu Asn Leu 20 25 3)	
ine Ser Lys Ala His His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 39 40 45	
Asn lys Arg Cys Pro Asn Thr Gly Glu Leu Cys Asp Val Val Glu Gln	
Asn Tys Cys Tyr Thr Tyr Cys Pae Ile Val Val Cys Leu 65 70 75	
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 \$210. \$210. \$17E \$220. \$220. Xaa at residue 2 may be Pro or hydroxy-Pro; Xaa at residue 12 may be Glu or gamma-darboxy-Glu; Xaa at residues 17 ar y ke Tyr, 125-I-Tyr, ποno-iodo-Tyr, di-iodo-Tyr, O-sulpho-O-phospho-Tyr 	ia is ma
PART	
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Cys Kaa Ash Thr GTy Kaa hed Cys Map val val had 54 had 15	
Kaa Thr Eaa Cys Fhe Ile Val Wal Cys Leu 20 25	
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acc gcc Thr Ala 15	tgg Trp	aca Thr	ttc Phe	gtc Val 23	aag Lys	gct Ala	gat Asp	gac Asp	tac Ser 25	aga Arg	aat Asn	gga Gly	ttg Leu	gag Glu 30	9	6
aat cit Asn Det	ttt Phe	acg P.no	aag Lys 35	gca Ala	egt Arg	cac His	gaa Glu	atg Met 40	āag Lys	aac Asn	tcc Ser	aaa Lys	gcc Ala 45	tot 3er	14	4
aaa tta Lys Leu	laac LAsn	aag Lys 5)	agg Arg	tgc Cys	gtt Val	gaa Glu	gat Asp 55	ggt Gly	gat Asp	ttt Phe	tgt Cys	ggt Gly 60	ccg Pro	gga Gly	19	2
tat qas Tyr Glo	i gag i Glu 65	tgo Cys	t go Cγε	agt Sar	ggc Gly	tta Phe 70	tgc Cys	ctt Leu	tac Tyr	ytc Val	tgc Cys 75	atc Ile			23	4
taaasot	igos -	gtgat	igt et	it gt	tacta	ecçat	t eta	gtgat	iada	cata	cgag				28	1
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Trp Thi	r Phe	Va. 20	Lys	Ala	Asp	Asp	Ser 25	Arg	Asn	Gly	Leu	Glu 30	Asn	Leu		
Phe Fro	lys 35	Ala	Arg	His	Glu	Met 40	Lys	Asn	Ser	Lys	Ala 45	Ser	Lys	Leu		
Asn ly:	s Arg	Cys	Va.L	Glu	Asp 35	Gly	Asp	Phe	Cys	Gly 60	Fro	Gly	Tyr	Glu		
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(1)..(25)Xaa at residues 3, 13 and 14 may be Glu or gamma-carboxy-Glu; Xaa <222> at residue 10 may be Pro or hydroxy-Pro; Xaa at residues 12 and 22 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Ty r or C-pnospho-Tyr <400> 334 Cys Val Xaa Asp Gly Asp Phe Cys Gly Xaa Gly Xaa Xaa Xaa Cys Cys Ser Gly Phe Cys Leu Xaa Val Cys Ile <2105 335 <2115 393 <2125 ENA <2130 Conus generalis <2220 → HIS <221. ₹222> □ 11..(249) <400> 335 ggatoc atg asa etg acg tgt gtg gtg atc gtt get gtg eta tte ttg Het Lys Leu Thr Cys Val Val Ile Val Ala Val Leu Phe Leu 48 act god tigg ada the gho adg got gat gad add aga tah aaa ong gag 96 Thr Ála Trp Thr Phe Val Thr Ála Ásp Ásp Thr Arg Tyr Lys Leu Glu aat oot itt otg aag goa oge aac gaa otg cag aaa cac gaa goe tot 144 Asn Pro Phe Leu Lys Ala Arg Asn Glu Leu Glm Lys His Glu Ala Ser 192 caa otg aac gag aga ggo tgo ott gac oca ggt tao too tgt ggg acg Cln Leu Asn Glu Arg Gly Cys Leu Asp Pro Gly Tyr Phe Cys Gly Thr ecg ttt ctt gga gca tac tgc tgc ggt ggc att tgc ctt att gtc tgc Pro Phe Leu Gly Ala Tyr Cys Cys Gly Gly Ile Cys Leu Ile Val Cys 240 ata gaa acg taaaggottg atgtottota oteccatotg tgotaccoot egag 293 The Glu Thr 80 <210> 336 <211> 81 <212> PRT <213> Conus generalis <4005 336 Met Lys Leu Thr Cys Val Val He Val Ala Val Leu Hie Lou Tri A o

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ada ttg gad aag aag tgd dit ggg ttt ggt gaa get tgt dit atg dit Lys Leu Asp Lys Lys Cys Leu Gly Phe Gly Glu Ala Cys Leu Met Leu

• • •	
tat toa gao tgo tgo ago tat tgo gtt got gto tgo ota Tyr Ser Asp Cys Cys Ser Tyr Cys Val Ala Leu Val Cys Leu 55 70 75	234
taaaactann gigacgicti ciactoccci cigigciaco iggetigaic iiigaiigge	294
gugugngent cacuggutat gaaccectet gateetacte teugaagaee teuggggtee	354
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Fhe Ser Asn Val His His Glu Met Lys Asn Leu Glu Asp Ser Lys Leu 35 40 45	
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Bor Kaa Cys Val Ala Leu Val Cys Leu 20 - 25	
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goa bit gad gaa atg aad dod god tot aaa ttg aad gag aga ggd Ala Arg Asp Glu Met Asn Pro Ala Ala Ser Lys Leu Asn Glu Arg Gly 35 40	144
tgb bit gca gtt gat tat tit tgc ggc ata bcg tit gtg agc aac ggg Cys Lou Ala Val Asp Tyr Phe Cys Gly Ile Pro Phe Val Ser Asn Gly 50 55	192
Cra tyc tgc agt ggc aat tgt gtt ttt gtc tgc aca ccc caa ggg aag Leu Tys Cys Ser Gly Asn Cys Val Phe Val Cys Thr Pro Gln Gly Lys 65	240
taaaastgs: gtgacgtott etactoosot otgtgstace tggottgate titgattggo	300
q qtq:actt cactggttat gaacccctct gatectactc tetgaagace tetggggtee	360
Ancatocaam taaagegada teecaaaaaa aaaaaaaaaa aaaaa KRI D 342 KRI D 78 ARI D FFT KRI Cinus episcopatus 4400 342	404
Net lys Leu Thr Cys Val Val Ile Ile Ala Val Leu Phe Leu Thr Ala 15	
Trr Thr Ene Val Met Ala Asp Asp Pro Arg Asp Glu Pro Glu Ala Arg 20 25 30	
Asp Blu Met Asn Prc Ala Ala Ser Lys Leu Asn Glu Arg Gly Cys Leu 35	
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<2105 344
<2110 200
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32133 domus achatinus
<221,-
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                                                                                 111
ctt tgt the eee teg gat ege ata eaa tge tge agt gge aag tge aca
Leu lys Fhe Fro Ser Asp Arg Ile Gln Cys Cys Ser Gly Lys Cys Thr
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                        15
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                                                                                  202
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22.15 27
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Cys Tys Cer Gly Lys Cys Thr Phe Val Cys Met
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<211 - 201
<212 - DNA
KB13 - Comus achatinus
< 2.2
       303
₹221 •
\approx 222 \cdot (-5) \dots (171)
<401 - 3i'
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etatitetit itgigietga caga tig aga ggg tgc git det agt ggt gaa
                                                                           111
                              Leu Arg Gly Cys Val Pro Ser Gly Glu
att igt iac tto atg gat cac ata gga igo igo agi ggo aag igo aca
Ile Dys Dyr Phe Met Asp His Ile Gly Cys Cys Ser Gly Lys Cys Thr
                                                                           159
                      15
tto gto igo atg faaaactgoo gtgatqiott stootsocat o
Phe Val lys Met
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 · 223>
         Les Glu or gamma-carboxy-Glu; Xaa at residue 10 may be Tyr, 125-1-
         Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr
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K22045
K221: SITE
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        residues 6 and 14 may be Pro or hydroxy-Pro
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 tgg aca the gree acg get gat gae tee aga gae get eeg gat agt gea
                                                                              96
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                                                                             144
 ogo aaa jac tit gaa tig aga ggg tgo oft oot agg tgg gaa tit tgt
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Trp Ile Phe Val Met Ala Asp Asp Ser Arg Asn Sly Leu Glu Asn Leu

150												
	20			25					30			
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ctt gga cca Leu Cly Pro 65	ctg tgc Leu Cys	tgc agt Cys Ser 70	cgc Arg	ttg Leu	tgc Cys	tta Leu 75	tac Tyr	gtc Val	tgc Cys	atg Met		237
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	ıs striol	at is										
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Trp lie Phe	e Val Met 20	: Ala Asp	a Asp	Ser 25	Arg	Asn	Gly	Leu	Ğlu 30	Asn	Leu	
Fro 3ln Thi	r Thr Arc	g His Gl	ı Met 40	Lys	Asn	Pro	Glu	Ala 45	Šer	Lys	Leu	
Asn Gin Th	r Asp Cy.	s Ieu Al 55	a Lys	Asp	Ala	Phe	Cys 60	Ala	Trp	Pro	Ile	
Leu Gly Pr 65	o Leu Cy	s Cys Se ~0	r Arg	Leu	Cys	Leu 75	Tyr	Val	. Cys	: Met		
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Leu Cys C	ys Ser A 20	rg Leu C	ys Le	u Xaa 25	a Va	l Cy	s Me	t				

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tgg Trp	aca Thr	tto Phe	gtc Val 20	acg Thr	gct Ala	gat Asp	gac Asp	tcc Ser 25	aga Arg	aat Asn	gga Gly	ttg Leu	gag Glu 30	aat Asn	ctt Leu	96
tat Ser	e sg Pro	aag Lys 35	gca Ala	egt Arg	cac His	gaa Glu	atg Met 40	aag Lys	aac Asn	acc Pro	gaa Glu	gee Ala 45	tct Ser	aaa Lys	teg Ser	144
aac Asn	a aq Lys 5)		tat Tyr	gag Glu	tgc Cys	tat Tyr 55	tct Ser	act Thr	ggt Gly	aca Thr	ttt Phe 60	tgt Cys	ggc Gly	atc Ile	aac Asn	192
āga Gly 65		ctc Leu	tgc Cys	tgc Cys	ägc Ser 70	aac Asn	ctt Leu	tge Cys	tta Leu	ttt Phe 75	tto Phe	gtg Val	tgc Cys	tta Leu	aca Thr 80	240
ttt	tag S⊜r	tga	tgtc	ttc	tect	acac	tc									266
<21<221<21	12	360 82 25.T Comu	ls C0	onsor	:s											
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Met 1	Lys	s Leu	ı Thr	c Cys 5	s Met	. Met	; Ile	e Val	L Ala 10	. Val	Leu	ı Phe	. Let	i Thr 15	Ala	
Trŗ) Th	r Phe	e Val 20	l Th:	r Al	a Asp	o Asp	Se 25	r Arç	g Asi	n Gly	, Let	ı Glu 30	ı Ası	ī Leu	
Sei	r Pr	c Ly. 35	s Al	a Ar	g Hi	s Gl	u Me ¹ 40	t Ly	s Asi	n Pr	o Glu	u Ala 45	a Se	r Ly	s Jer	
Asi	n Ly 50	rs. Ar	g Ty	r Gl	и Су	s Ty 55	r Se	r Th	r Gl	y Tr.	: Pf.:	е Су	s G.	· · · ·	. f. ₁₂ .	
431 65		y Le	и Су	rs Gy	s S∈ 7(er As	n Le	u Cy	s Le	u Ph 75	e Ph	e Va	1 Су	s Lē	u Thr	

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<21.> PRT

1215 Conus consors

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Phe Pro Lys Ala Arg His Glu Met Lys Asn Pro Glu Ala Ser Lys Leu 40

Asn Lys Arg Asp Gly Cys Tyr Asn Ala Gly Thr Phe Cys Gly Ile Arg 50 60

Pro Gly Leu Cys Cys Ser Glu Phe Cys Phe Leu Trp Cys Ile Thr Phe

Val Asp Ser Gly

364

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PRT <212>

Conus consors < 21.3>

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<400: 364

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Cys Cys Ser Xaa Phe Cys Phe Leu Xaa Cys Ile Thr Phe Val Asp Ser

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205 <211>

20125 DNA

4.21.35 Conus circumcisus

₹220>

-2212 CDS

(83)..(175) J222>

4400 365

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grefefetett etgretgret et aar aga tre a t aan tar ar ar ag ge 1 : . . Asn Arg Leu Ser Arg Cys lie Pro Ser Gly

gat ctt tgt ttc ccc tcg gat cac ata caa tgc tgc aat gcc aag tgc Asp Leu Cys Fhe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Lys Cys 15 20 25	160
goa the gie tge tig taaaactgee gigatgieti etelleesig Ala Phe Val Cys Leu 30	205
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Amp dis lie Gln Cys Cys Asn Ala Lys Cys Ala Phe Val Cys Leu 20 25 30	
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Cyc Asn Ala Lys Cys Ala Phe Val Cys Leu 20	
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gat cit tigt tid occ tog gat cac ata saa tigo rigo agt god aag tigo Asp Did Cys Phe Pro Ser Asp 1.1s Il Glm Cys Cys Ser Ala Lys Cys 15 20 25	169
gea the greetige translation grantfett etactedest s	206

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                                                                        112
                           Asn Arg Leu Ser Arg Cys Ile Pro Ser Gly
 yat cit tgt tic dec tog gat cac ata caa ige ige agt god aag ige
                                                                        160
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                                                                        206
 Ala Phe Val Cys Leu
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 <21(b) 374
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 <22C-
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 gtototottt otgittigtigt it aan aga tig agt agg tigo att oot agt iggt. Asn Arg Leu Ser Arg Cys Ile Pro Ser Gly
 gat ctt tgt ttc ccc tcg gat cas ata saa tgc tgc aat gcc gag tgc Asp Leu Cys Fhe Fro Ser Asp His fle Gln Cys Cys Asn Ala Glu Cys
                                                                                 160
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(212> DNA) <211> 1213> Conus diroumdisus <22(> <221> JDS <222> (83)..(175) <400> 377 egatecatet grecatecat statteatte attegetgre aaactgraft aaatatteaa 60 gtototottt otgittigigt of aac aga tig agt tigg tige att oot agt ggt 112 Asn Arg Leu Ser Trp Cys Ile Pro Ser Gly gat ctt tgt ttc ccc tcg gat cac ata cga tgc tgc agt gcc aag tgc Asp Leu Cys Phe Pro Ser Asp His Ile Arg Cys Cys Ser Ala Lys Cys 15 20 25 160 gea tto gto tgo ttg taaaactqoo gtgatgtott stortoocat o 206 Ala Phe Val Cys Leu <210> 378 <211> 31 +212> FRT -213> Conus direumcisus -.4505 57 Asn Arg Leu Ser Trp Cys Ile Pro Ser Gly Asp Leu Cys Phe Pro Ser

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Asn Arg Leu Ser Arg Cys Ile Pro Ser Gly
                                                                          112
 Hat cit tot tic eec teg gat bac ata caa toe toe aat gee aag toe
                                                                          160
 Asp Leu Cys Phe Pro Ser Ásp His Ile Gln Cys Cys Asn Ála Lys Cys
 joa tie god tgo tig taaaactgoo gigaigisti etetiseeet e
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Cys Asn Ala Lys Cys Ala Phe Ala Cys Leu
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$2115  206
$2127  3MA
$2135  3 nus direumeisus
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<221 - C.S
<222 (3)..(175)
< 400 > 3 - 3
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                                                                                   60
atotototot etgittigtigt of aac aga tig agt tigg tige att oot agt ggt
Asn Arg Leu Ser Trp Cys Ile Pro Ser Gly
                                                                                   112
 Hat ctt igt tte doc tog gat dae ata daa tge tge aat ged aag tge
Asp Leu lys Phe Pro Ser Asp His Ile Gln Cys Cys Asn Ala Lys Cys
                                                                                   160
 qua tto jto tgo ttg taaaactgoo gtgatgtott ctactoocot b
Ala Phe Val Cys Leu
                                                                                   206
                30
 +216> 134
        ERT
 -211>
 4.212>
 *213> Conus circumcisus
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₹2211 CDS
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Asn Arg Leu Ser Trp Cys Ile Pro Thr Gly Asp Leu
                                                                                112
tgt itc doc tog gat dad ata daa tgo tgo agt ggd aag tgd ada tto
Cys Phe Pro Ser Asp His Ile Gin Cys Cys Ser Gly Lys Cys Thr Phe
                                                                                 160
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Val Dys Met
30
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<2116 Conus monachus

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Ser Pro Lys Ala Arg His Glu Met Lys Asn Fro Glu Ala Ser Lys Ser

Asn Lys Arg Tyr Glu Cys Tyr Ser Thr Gly Thr Phe Cys Gly Ile Asn

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Phe Ser

391 <2101

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<220.

SITE <221 ·

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<400 → 391

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Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr Phe Ser

392 <210>

277 <211>

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Conus stercusmuscarum

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96

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oga ata tgg gag aaa ott ttg ttg aay goa ogt gab gaa atg aag aad 144 Arg Ile Trp Glu Lys Leu Leu Leu Lys Ala Arg Asp Glu Met Lys Asn

the gaa goe lot had tig aga tig tigo att not agi ggi gaa ott tigt Pro Glu Ala Ser Gln Leu Arg Trp Cys Ile Pro Ser Gly Glu Leu Cys

tto ego tog gat cao ata caa tgo tgo agt goo aag tgo goa tto gto The Arg Ser Asp His Ile Gln Cys Cys Ser Ala Lys Cys Ala Phe Val 240

80 7.0 65

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277

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PET' <2122

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Fro Glu Ala Ser Gln Leu Arg Trp Cys Ile Pro Ser Gly Glu Leu Cys

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Cys Leu

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Conus stercusmuscarum <.2150+

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Cys Cys Ser Ala Lys Cys Ala Pho Val Cys Leu DO 29

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ttt bog aag Phe Pro Lys 35	gca egt ca Ala Arg Hi	t gaa atg aa s Glu Met Ly 40	ag aac ccc ys Asn Pro	gaa god tot Glu Ala Ser 45	aaa ttg 144 Lys Leu
aac aag aga Asn Lys Arg 50	gat ggg tg Asp Gly Cy	c tot agt go s Ser Ser G 55	Ty Giy Thr	ttt tgt ggc Phe Cys Gly 60	atc ogt 192 Ile Arg
cca gga ctc Pro Gly Leu 65	tgc tgc ag Cys Cys Se 70	o gag tit to r Glu Phe C	go ttt ott Ys Phe Leu 75	tgg tgc ata Trp Cys Ile	aca ttt 240 Thr Phe 80
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Phe Pro Lys 35	: Ala Arg Ei	s Glu Met I 40	Lys Asn Pro	Glu Ala Ser 45	Lys Leu
Asn Lys Arg 50	; Asp Gly Cy	s Ser Ser G 55	Gly Gly Thr	Phe Cys Gly	Ile Arg
Pro 3ly Let	ı Cys Cys Se 70		Cys Phe Leu 75	Trp Cys Ile	Thr Phe 80
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Trp Thr Phe Val Thr Ala Asp Asp Ser Arg Asn Gly Leu Glu Asn Leu 25

Leu Leu Lys Thr Arg His Glu Val Glu Asn Fro Lys Ala Ser Arg Ser Gly Cly Arg Cys Arg Pro Gly Gly Thr Val Cys Gly Phe Pro Lys Fro Gly Iro Tyr Cys Cys Ser Gly Trp Cys Phe Free Val Cys Ala 70 <210: 400 27 <2111 <212: PET <213:-Conus striolatus <220 <221 · SITE (1..(27)<222 -Xaa at residues 3, 11, 13 and 15 may be Pro or hydroxy-Pro; Xaa at residue 16 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O <223 · -sulpho-Tyr or O-phospho-Tyr; Xaa at residue 21 may be Trp or bro mo-Trp <400 → 400 Cys Arg Xaa Gly Gly Thr Val Cys Gly Phe Xaa Lys Xaa Gly Xaa Xaa Cys Jys Ser Gly Xaa Cys Phe Phe Val Cys Ala 401 272 <211><211> <2.12> DNA <213> Conus striclatus <2205 CIS <221> $\langle 222 \rangle$ (1)... 243) ₹400> 401 atg aaa ctg acg tgc gtg atg atc gtt gct gtg ctg ttc ttg act gcc Met Lys Leu Thr Cys Val Met Ile Val Ala Val Leu Phe Leu Thr Ala tgg aca the 4th acg get gat gad too aaa aat gga otg gag aat het Trp Thr Phe Val Thr Ala Asp Asp Ser Lys Asn Gly Leu Glu Asn His the tigg aag goa ogt gad gaa atg aag aad ogd yad god tot aaa thy 4 4 The Trp Lys Ala Arg Asp Glu Met Lys Asn Arg Jlu Ala Ser Lys Lec Jan aaa aag gaa goo tgo bat oog oot ggt ant tir igt ggd ata aag Asp Lys Lys Glu Ala Cys Tyr Pro Pro Gly Thr Phe Cys Gly Ile Lys eed agg cta tgc tgc agt gag ttg tgt tta eeg gee gtc tge gtc ggt 240 Pro Gly Leu Cys Cys Ser Glu Leu Cys Leu Pro Ala Val Cys Val Gly

ggt taactgoogt gatgtettet atteceete Gly

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<211> 81

<212: PET

<213 Conus striolatus

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23

<212€ PF I

<213> Conus striolatus

<2200

SIIE <221:

(1)..(29)<2222 >-

Xaa at residues 1 and 20 may be Glu or gamma-carboxy-Glu; Xaa at residue 4 may be Tyr, 125-I-Tyr, mono-iodo-Tyr, di-iodo-Tyr, O-s ulpho-Tyr or O-phospho-Tyr; Xaa at residues 5, 6, 14 and 24 may b € Pro or hydroxy-Pro

<4000 403

Xaa Ala Cys Xaa Xaa Xaa Gly Thr Phe Cys Gly Ile Lys Xaa Gly Leu

Cys Cys Jer Maa Leu Cys Lou Maa Ala Val Cys Val Gly

<21)> 4 4

<211> 205

<212> DNA

<213> Conus striolatus

96

144

1.92

240

265

Arg Thr Fhe Val Thr Ala Asp Asp Ser Arg Asn Sly Leu Glu Asn Leu

Ser Pro Lys Ala Arg His Glu Met Lys Asn Fro Glu Ala Ser Lys Ser 40 45

Asn Lys Arg Tyr Glu Cys Tyr Ser Thr Gly Thr Phe Cys Gly Ile Asn 50 55

Gly Gly Leu Cys Cys Ser Asn Leu Cys Leu Phe Phe Val Cys Leu Thr 65 $^{-7}\mathrm{O}$

Phe Ser

<220>

<210> 406 ·211≥ 31

Cys His Leu Ile Thr Ala Asp Asp Ser Arg Gly Thr Gln Lys His Arg

25

30

Ser Leu Arg Ser Thr Thr Lys Val Ser Lys Ser Thr Ser Cys Met Lys 35

Ala Gly Ser Tyr Cys Val Ala Thr Thr Arg Ile Cys Cys Gly Tyr Cys 50 60

Ala Tyr Phe Gly Lys Ile Cys Ile Gly Tyr Pro Lys Asn 65

<210> 409

<211> 35

<212> PRT

<213: Conus striolatus

₹2200

<221 SITE

(222) (1)..(35)
(223) Xaa at residues 10, 21, 24 and 32 may be Tyr, 125-I-Tyr, mono-iod
O-Tyr, di-iodo-Tyr, O-sulpho-Tyr or O-phospho-Tyr; Xaa at residue
33 may be Pro or hydroxy-Pro

<400> 409

Ser Thr Ser Cys Met Lys Ala Gly Ser Xaa Cys Val Ala Thr Thr Arg 10 15

Ile Cys Cys Giy Xaa Cys Ala Xaa Phe Gly Lys Ile Cys Ile Gly Xaa 25.

Xaa Lys Asn 35